

CANADIAN GEOGRAPHICAL JOURNAL

APRIL
1937

VOL. XIV
No. 4



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CANADIAN GEOGRAPHICAL JOURNAL

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Editor

Gordon M. Dallyn

This magazine is dedicated to the interpretation, in authentic and popular form, with extensive illustration, of geography in its widest sense, first of Canada, then of the rest of the British Commonwealth, and other parts of the world in which Canada has special interest.

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The British standard of spelling is adopted substantially as used by the Dominion Government and taught in most Canadian schools, the precise authority being the Oxford Dictionary as edited in 1929.

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FILMING RURAL FRENCH CANADA

by RICHARD FINNIE

WITH behind me a half-dozen Canadian polar expeditions, on which I had studied and written about and photographed the Eskimos and their country, I began to reflect that there were other parts of the Dominion and other people equally interesting and less remote. And of the nine provinces surely none was more intriguing than Quebec, where many of the inhabitants lived much as did their ancestors of the 17th Century, where peasant women toiled in the fields with their men-folk, baked bread in outdoor ovens, used spinning-wheels and hand-looms, and where, not only had automobiles not yet replaced horses, but where horses had not entirely replaced oxen!

After all, it is not such a far cry from the Arctic Ocean to the Gulf of St. Lawrence. One is inclined to overlook the fact that the Province of Quebec, with its half-million square miles of virgin forests, lakes and rivers, reaches right up to Hudson Strait.

Aware that while a goodly number of books and articles had been written about French Canada, there had never been produced a revealing, comprehensive documentary motion picture, I resolved to concentrate during this expedition on the making of a cinematic interpretation of the province and its people in summer; particularly in rural areas.

Setting out in an old car in May, my wife and I drove to Montreal and Quebec, pausing long enough, cinematically, only to limn certain features of historical or sociological significance. Then, leaving cities behind, we passed on to the 17th-century Island of Orleans, to the rugged and colourful Gaspé Peninsula, to the picturesque county of Charlevoix between Quebec City and the Saguenay River. Since it would be impossible in any one season to visit and study every section of "habitant land," we planned our itinerary so as to paint a broad canvas and to portray conditions obtaining as typically in one vicinity as in another. Spending a week here, a fortnight or a month there, we would shift from one district to another, or back again, to record various seasonal

activities. We devoted ten days, also, to a cruise around Anticosti Island, out in the Gulf of St. Lawrence, 360 miles northeast of Quebec City.

We found a people who are often misrepresented, seldom understood. Loyally Canadian, they seem to us not quite of Canada; but neither are they of France (their *penchant* for flying the tricolour, as often as or more than the Union Jack, on fête-days may be a sort of compromise due to an urge to express their own personality). Yet the *habitant* thinks of himself as the true and original Canadian, which is logical enough if the Indian isn't considered. Some *habitants* whom we met actually expressed surprise when we referred to ourselves as Canadians, because English-speaking strangers to them were generally grouped either as *Anglais* or *Américain*. They are a people apart—apart in the sense that they preserve their own ideology and culture, their own language and traditions, as yet relatively little affected by modern civilization.

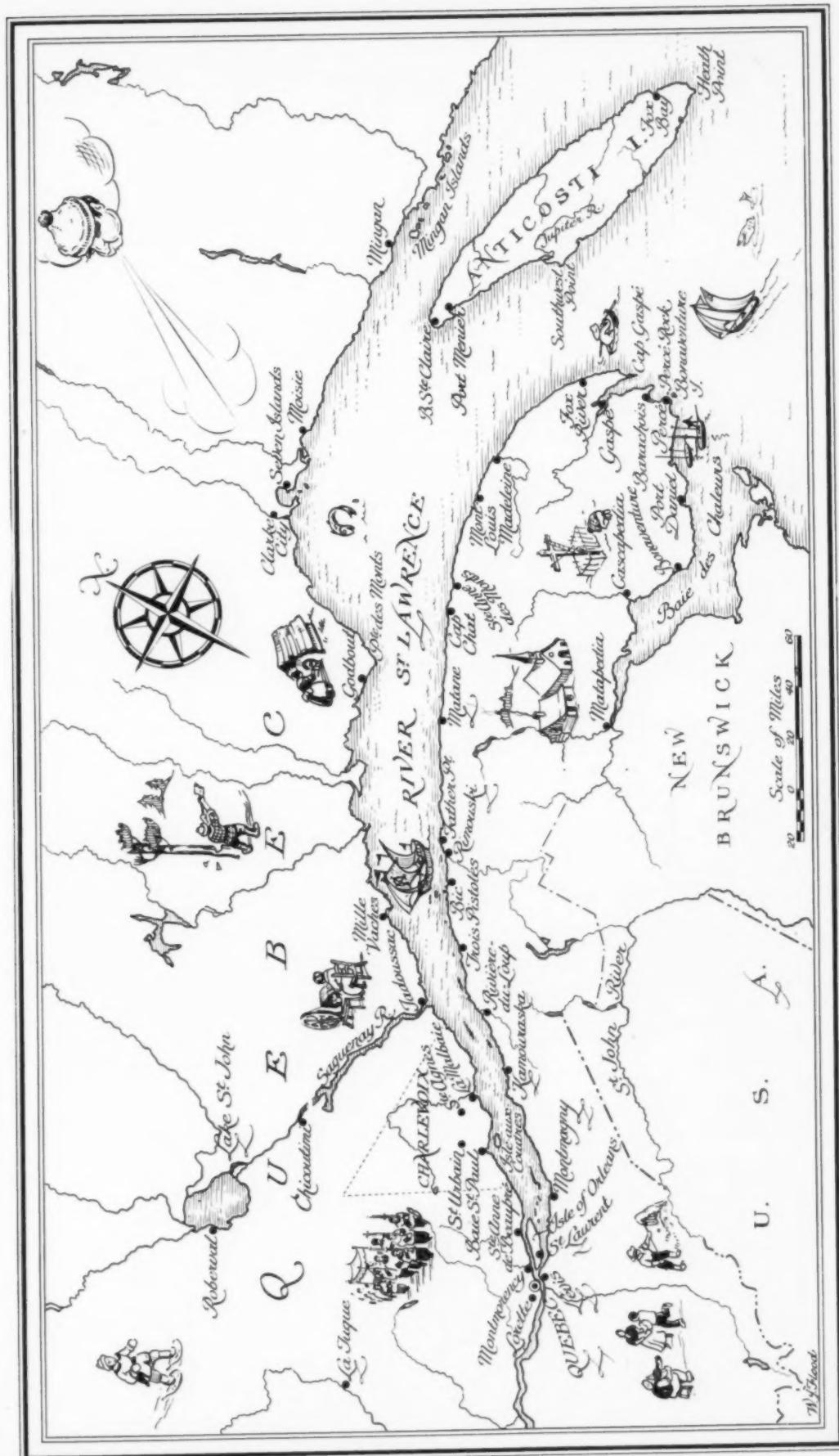
My photographic experience with the Eskimos stood me in good stead with the *habitants*. I had learned that the only satisfactory way to film primitive Eskimos was thoroughly to accustom them to the presence of the camera, sometimes for days, before starting to take pictures, and then they would pay no attention to it. With the *habitants*, however, much less patience was required. While many of them had, like the Eskimo, never before seen a motion-picture camera, they were more readily capable of understanding its function and would react accordingly. Let no reader misconstrue my comparison here. I entertain only the highest esteem and respect for my Eskimo friends, as I do for the *habitants*; and both groups possess many excellent qualities lacking in some of the rest of us.

To a man ploughing with oxen, to a woman baking bread in an outdoor oven, we would say: "Please don't pay any attention to us; just go ahead with your work as if we weren't here."

This approach almost invariably worked. The jovial, kind-hearted *habitants*

LEFT.—One of the hundreds of wayside shrines in rural French Canada.





ABOVE:—Eventide in old Quebec by Ivan Dmitri. Reproduced by courtesy of the Abbé Albert Tessier.



*Typical scenes of Quebec's hinterland, portrayed by Ivan Dmitri and reproduced by courtesy of the
Abbé Albert Tessier, of Three Rivers.*



would take it in good part and, bent on the completion of whatever task lay before them at the moment (they are among the hardest working people in the world), they would soon forget about us. It was only if they were asked to re-enact some bit of business that they would tend to become self-conscious, so such procedure was therefore avoided. We wanted no staged scenes, only genuine cross-sections of the everyday life of an extraordinary people. Regardless of the dexterity or perseverance involved, we preferred to adjust the camera to our actors rather than the actors to our camera.

Numerous residents of the Island of Orleans, as well as those of more isolated communities, have never been inside a motion-picture theatre, even though Quebec City, replete with all modern appurtenances in its ancient setting, is but nine miles away. They are often merely lacking in curiosity about things which do not immediately concern them. One venerable woman whom we encountered in St. Pierre had never in her long life visited the neighbouring parish of St. Jean, just five miles away.

Madame Joseph Plante, whom we photographed at her spinning-wheel, laughingly admitted that she could not even comprehend the nature of movies. One of her daughters had once attended a lantern-slide lecture and had carefully described it to her afterward; she remembered that quite well; but how motion pictures differed from lantern slides she could not grasp. The fact worried her not at all, however. She often went to Quebec City to help her husband sell the produce of their farm at the market-place, but it had never occurred to either of them to incur the expense of patronizing a nearby motion-picture theatre. Many years ago some well-meaning friends lured the Plantes into a Quebec theatre to enjoy a legitimate play. The Plantes were dazed; every seat was filled and never had they seen so many people so compressed. Before the curtain rose they began to wonder what might happen if fire broke out. Not daring to risk their lives sitting through the performance, desperately clutching one another they rushed out into the fresh air and hastened back to the peace and security of their beloved Island of Orleans.

Madame Plante recalled the episode as she sat at her spinning-wheel. Her shoe bobbing up and down on the treadle was

home-made—she made all her own footwear and had never bought a pair of shoes in her life. The wool she was spinning had been cleaned and carded at home, taken from skins bought from the local butcher. Formerly she had grown her own flax, which she also spun, braying and beating it herself. The family loom, which she and her daughters now use chiefly for weaving bedspreads to sell, had not so long ago turned out stiffs for the making of clothing. The men tilled their fields, tended their few cattle and kept traps set out in the St. Lawrence to ensure a quota of fish for Friday. With all this in mind, I could not help likening the Plantes and thousands of other families in rural Quebec to the Eskimos, not in appearance or manner of living, naturally, but in that they are still potentially, if not actually, self-sufficing. And, withal, the *habitants* usually create all the comforts and conveniences they want, if not luxuries. In this respect they are probably unique among the civilized peoples on this continent.

There is many a prosperous *habitant* family along the north and south shores of the St. Lawrence, as well as on the Island of Orleans. Thrifty is the *habitant*, driving a good bargain, yet big-hearted, hospitable and at times astonishingly generous. Rather than pay ten cents for a dishmop, the housewife may devote considerable time to making one; but if she receives an appeal to help Chinese missions she is likely to respond with all her ready cash.

Nowhere are the home ties stronger than in French Canada, where people have not lost the art of entertaining one another. Eschewing hotels as much as possible in the course of our work, we lived with *habitant* families and spent memorable evenings in conversation, in singing folksongs, or in playing *crapette* and other games.

As to language, of the five thousand inhabitants on the Island of Orleans, a scant handful speaks English; and, away from towns and cities, like ratios prevail almost everywhere else in the province. Their French, though Anglicisms and local variations in pronunciation and idiom have crept in, is essentially the same as that of their ancestors from Normandy.

Architecturally, rural French Canada is a joy to the aesthetic-minded traveller, with its many whitewashed houses of stone, hand-hewn beams and bell-cast or hip roofs—adaptations of the French Pro-

vincial style—some of them more than two centuries old. Unfortunately, not all the residents recognize or appreciate the simple beauty of their dwellings, coveting instead the square brick horrors of city cousins.

In order to expose perhaps no more than 100 feet of film, we sometimes motored several hundred miles, allotting a week or more to the undertaking. It was thus with the strawberry season on the Island of Orleans. After having long since finished most of our "shooting" on the island, we returned from a sojourn in Charlevoix County to be on hand for the berry-picking. Men, women and children toiled on their knees in the fields from dawn to dusk. We joined them and helped them gather the luscious fruit. When we ceased work now and then to catch a close-up, there was neither surprise nor resentment.

At Fox River, typical Gaspésian fishing village, we went out to sea in a twenty-foot schooner with a pair of cod fishermen. They and their fellows get little rest during the fishing season, often drifting with their nets all night long to catch herring for bait, then jigging all day for cod. As soon as the day's catch is brought ashore it must be gutted and split. The livers may be put aside for sale to codliver oil factories at fifteen cents a pailful. After being soaked in brine vats, the cod are spread out on stages to dry in the sun, turned at intervals and taken under cover when it rains, and the process may take several months, depending on the weather. The dried fish are baled and in former years were shipped off to Italy and South America to be sold very cheaply. The methods of catching and drying fish around the coast of Gaspé have changed but little during the three centuries since the industry had its inception there.

We spent a day on Bonaventure Island, a stone's throw from the magnificently situated village of Percé, and filmed the gannets on their nests and in flight. To get close-ups we were obliged to crawl out on ledges jutting into space two or three hundred feet above the sea. The birds were almost fearless, and we could have touched them had we liked. There are less than a dozen known breeding areas for gannets throughout the world, and the majority are around the British Isles. Of the few in North America, the most celebrated is that of Bonaventure. Once regarded as worthless, the gannets were

threatened with extinction when they were made targets for shotguns. To-day, their island is a sanctuary, where they breed unmolested, and these graceful members of the pelican family have become one of the greatest tourist attractions of Percé.

On Bonaventure Island, as against the countless thousands of birds, just nine families of humans live, all of them fisher-folk descended from swashbuckling Jersey privateers and freebooters. It is English they speak, but English of a sort that rings strange in our ears, with an unfamiliar accent and archaic words and idioms.

There was wild-life to be photographed during our visit to Anticosti. This "island of mystery"—more than 3,000 square miles of wilderness with some 500 inhabitants, about which most outsiders know practically nothing—has been privately owned since its discovery by Jacques Cartier in 1534. It is a paradise for sportsmen.

And, just as it is a paradise for sportsmen, so is it an Eden for its settlers, who were brought from the north shore of the St. Lawrence, most of them, by the Meniers, the last owners of the island before it was purchased by the Consolidated Paper Corporation, of Montreal. The islanders' problems are not the problems of the outside world; depressions and the like scarcely affect them. Many of the oldsters have not been to the mainland for a generation. One man, 32 years old, was born on the island, and has never been away from it. Expulsion is their only hazard. Having taken over complete responsibility for the well-being of the island and its people, the Corporation uses this method of keeping the population from becoming unwieldy. There can be no new settlers, and the only strangers tolerated are sightseers and sportsmen.

Trekking up Anticosti streams in horse-drawn rowboats, we surprised an occasional deer on our way to salmon pools. While the fishermen in our party cast for 15-pound salmon, we found sport in recording the struggles with our Filmo. A good deal of ingenuity as well as luck was needed to have the camera directed at the right place at the right time for a jump; and a jump completely recorded was considered a real triumph.

We selected Anticosti as the setting for a gesture to sportsmen in our motion picture, because it is an apotheosis of all

the vast fishing and hunting grounds throughout the Province of Quebec.

A few miles from Quebec City is the Indian reservation of Lorette, a final stronghold of the Hurons. Returning from Anticosti, we joined Marius Barbeau, the anthropologist and folklorist, and went there to secure some special motion pictures for the National Museum of Canada.

We were conferring now with Caroline Gros-Louis. She was a small, aging woman, but well preserved and wiry, swarthy of countenance, with an aquiline nose and dark, beady eyes. She looked every inch a proud remnant of the Hurons.

She and Barbeau were talking rapidly in French. "Do you remember," he queried, "that dance song you sang so beautifully at the Quebec Folksong Festival? Ah, you were a great success there!"

Her face lit up with pleasurable recollection, and she began to hum, her body swaying rhythmically.

Barbeau recalled the opening words of the song, and they chanted them in unison. Then, spontaneously, she and Barbeau rose from their chairs and, facing one another, stamped their feet and swung their arms from side to side, striking and holding dramatic attitudes momentarily. All the while they sang in the ancient Huron dialect. The dance song came to an abrupt conclusion with the exclamation "Sakala-marié!" Then Caroline and Barbeau sat down again, gravely, and resumed their conversation.

I was impressed and a little thrilled. How wonderful that this scientist should cast aside his mantle of reserve to join with an Indian woman in the singing of a folksong! Wonderful, indeed, how each had entered so unselfconsciously into the spirit of the thing!

That was the impression the tableau at once made upon me; and it counteracted in some measure the initial disappointment of arriving at the Indian reservation to discover no wigwams, lodges or teepees; only neatly-kept cottages and frame buildings. I hadn't yet had time to ascertain that every Indian in Lorette spoke only French and perhaps some English, but no Indian (Caroline had memorized her songs at her mother's knee), and that the Indians here were so diluted of blood through generations of miscegenation that they were now almost com-

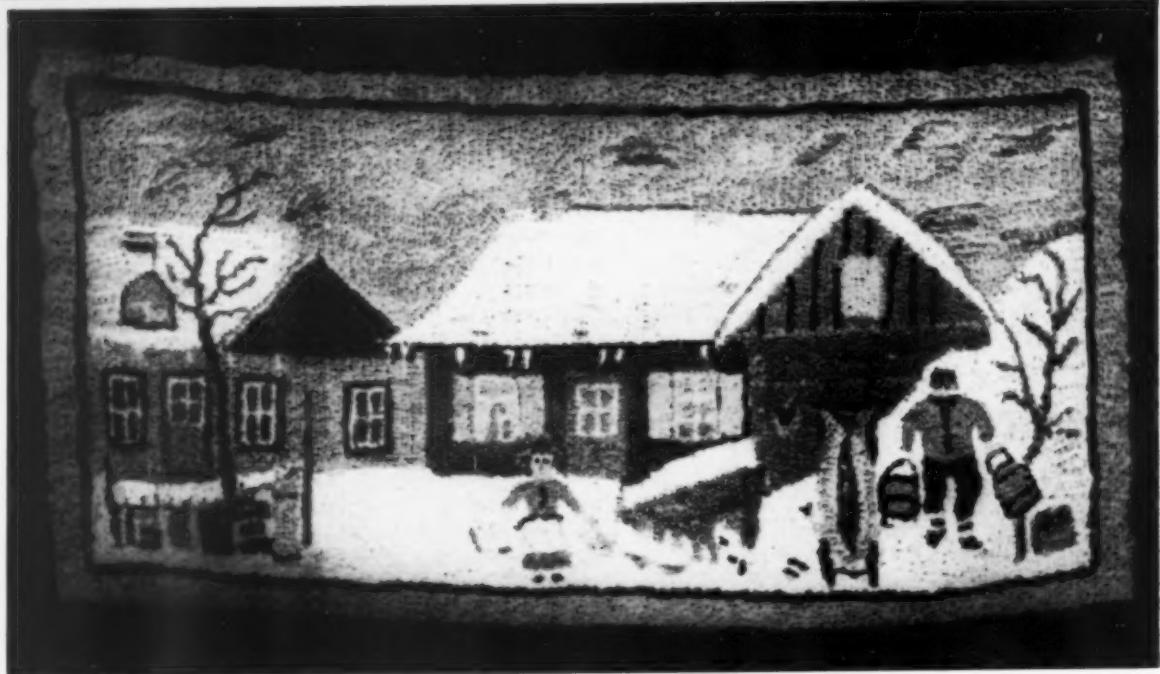
pletely white, except nominally—and nominally for commercial reasons, mostly, for, besides trading with tourists locally, they maintained one of the largest Indian curio factories in Canada.

We were escorted through the factory, where we watched descendants of Huron braves operate up-to-date moccasin-making machines. In annexes we saw, first a relative of Caroline Gros-Louis constructing a canoe (not of birch bark) and, second, a Huron craftsman making snowshoes. The latter's fingers trickled across the frames with the swiftness and precision of a hen picking up grain as he strung the *raquettes*; he could string ten or a dozen pairs a day. Here was genuine native handicraft. But the man remarked sadly that he had fewer orders to fill than formerly, due to the keen competition of Michigan factories.

In the office we admired a cigar-store Indian, resembling Sherlock Holmes, that served as a mascot. Carved by Jobin, illustrious French-Canadian sculptor, nearly a half-century ago, it had long stood in the doorway of a Quebec tobacconist's shop before finding its way to Lorette. This, it seemed to us, was really the last of the Hurons.

Autumn was almost upon us. We drove to Charlevoix County, where we had already spent several weeks, to make further studies and to secure additional sequences for our film. We ferried to Isle aux Coudres and saw wind-driven threshing machines of a quaint pattern rarely found elsewhere, and seaweed for fertilizer being hauled in ox-carts. In Baie St. Paul we photographed the making of hooked rugs by experts, and were fascinated by the intricacies of the setting-up of a loom for weaving homespun. There, also, we saw one of the few foundries that are still turning out cast iron grave markers, which French-Canadians formerly favoured, and called at a tannery, where hides were treated for fashioning the picturesque and practical, but disappearing, *bottes sauvages*.

We saw square hand-churns in use, some of them a hundred years old. We saw hats being braided from wheat straw. We learned how bread is baked in outdoor ovens, and how, if it should burn, a palatable coffee substitute can be brewed from the charred crust. We attended an informal get-together of *habitant* families near St. Agnes, when young and old vied with one another in the performance of *la danse*



Rug hooked by a habitant woman of Charlevoix County. The design is original, portraying the aftermath of a pig-slaughtering.

A hooked rug being made in a Baie St. Paul garden, Charlevoix County.



de la jarretière, to the accompaniment of ancient tunes played on a fiddle. A lively and complicated step-dance, *la danse de la jarretière* was inspired by the sword dance, as introduced by Scottish settlers not long after the conquest.

Though religious processions are no novelty anywhere in the province, fortunate indeed is the traveller who witnesses one in an out-of-the-way village like St. Urbain, nine miles north of Baie St. Paul. It was *La Fête Dieu*, and an unforgettable spectacle. It began at the church and ended at a house on the outskirts of the village, where an altar had been improvised on the *galerie* (veranda). In front were little children in white dresses, in the middle was the parish priest walking beneath a canopy and carrying the Blessed Sacrament, the while altar boys preceded him, stepping backward and swinging censers, and behind trouped the adult parishioners. All those not marching in the procession were kneeling by the roadside, or on their *galeries*, intoning prayers. It was an impressive demonstration of the faith and piety of a simple people.

We succeeded in recording all this, unobtrusively, with the motion-picture camera, and no one protested. We had neglected, however, to seek the priest's permission beforehand, which we regretted. Thereafter we were more tactful, as we wanted to offend no one.

In rural Quebec the parish priest is the most respected and influential member of every community. Once we expressed to one on the Island of Orleans the hope that we might photograph a typical good-sized *habitant* family. "It shall be done," he said, smiling.

Within a couple of hours we were directed to a house where all members of the family, dressed in their Sunday best, were assembled on their *galerie* awaiting us. Yes, they were all there: father, mother, seventeen children, several sons and daughters-in-law, and a half-dozen

grandchildren. A close-up was taken of each one. Soon afterward we were invited to photograph another family, almost as large, which did not want to let their neighbours take all the honours. When that was finished we made a rule to photograph no more *habitant* families *en masse* lest our stock of film be prematurely exhausted. In the Province of Quebec, families of twenty children are not particularly rare. No wonder, then, that French-Canadians, who were counted in thousands in 1759, are counted in millions in 1937!

With every able-bodied member of every family toiling through the week, Sunday in rural Quebec is definitely a day of relaxation as well as worship. The church is the hub around which the social life of each community revolves. Sunday morning the *habitants* assemble from every corner of the parish, coming on foot, by motor car or truck, or in quaint buggies; and it is sometimes difficult to identify at once all of one's acquaintances in their "store clothes." Before mass they cluster in the churchyard to discuss the weather, the crops, the live stock, the engagements, the marriages, the births, the deaths, or the latest local adventure or accident, for this is one of their few opportunities to forgather. And on Sunday afternoon, if it is warm, they are to be seen on their *galeries*, still dressed up, chatting and rocking—how they love to rock in their rocking-chairs!

English-speaking Canadians who do not understand them are sometimes prone to dismiss the *habitants* (or the *cultivateurs*, as they more often refer to themselves) as backward, primitive folk without a great deal to commend them. In reality, they have a fine old culture and interesting traditions; they are intelligent, good-humoured, hospitable and generous. In this age of speed we might do well to learn from them how better to enjoy life in a simple, leisurely manner.

Vivent les habitants!



*Old French-Canadian church,
St. Francois, Island of
Orléans, typical of many
religious structures throughout
the province.*



Road along the St. Lawrence, near Baie St. Paul, Charlevoix County.

House, 250 years old, on the Island of Orléans. (The pots and pails in the foreground, their bottoms knocked out, protect young tomato plants from late frost and cut-worms.)



Habitant family picking strawberries, Ste. Famille, Island of Orléans.



Habitant woman braiding wheat straw for making straw hats, Montmorency County.



Preparations for the baking of bread in an outdoor oven, Charlevoix County.

Setting up a loom preparatory to the weaving of homespun, Baie St. Paul, Charlevoix County.



Madame Joseph Plante at her spinning-wheel; St. Pierre, Island of Orléans.



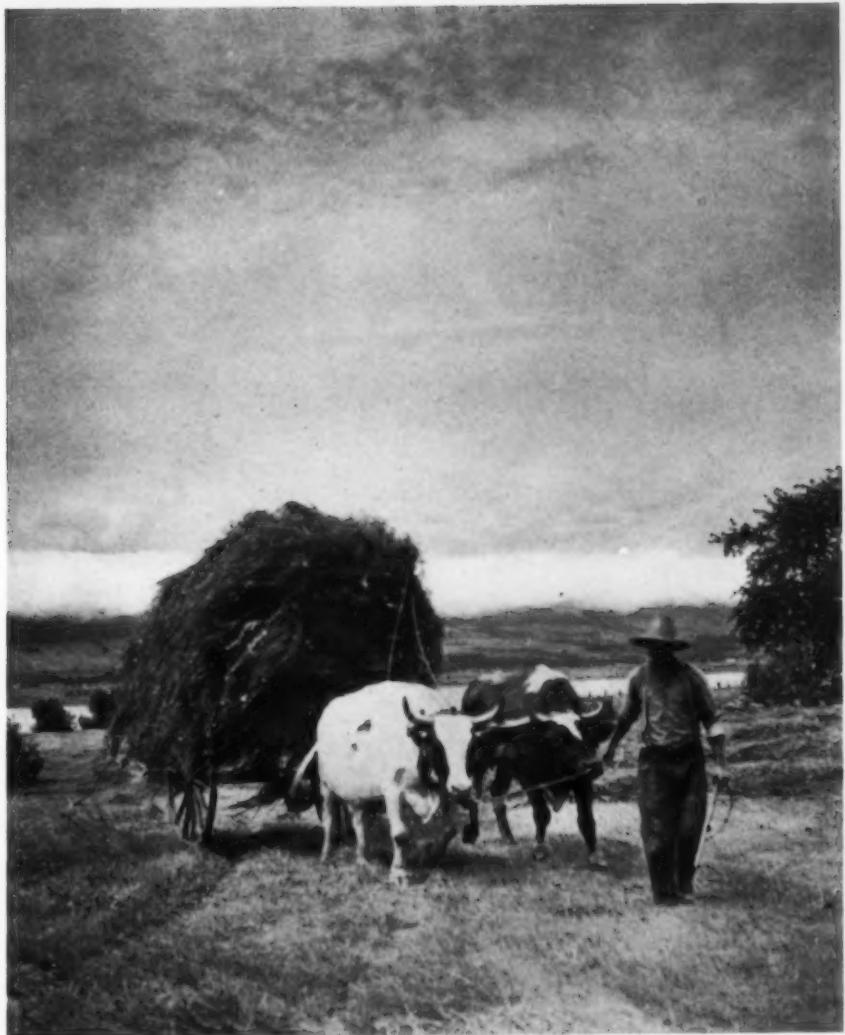
The fishing village of Rivière aux Renards (Fox River), on the Gaspé Peninsula.

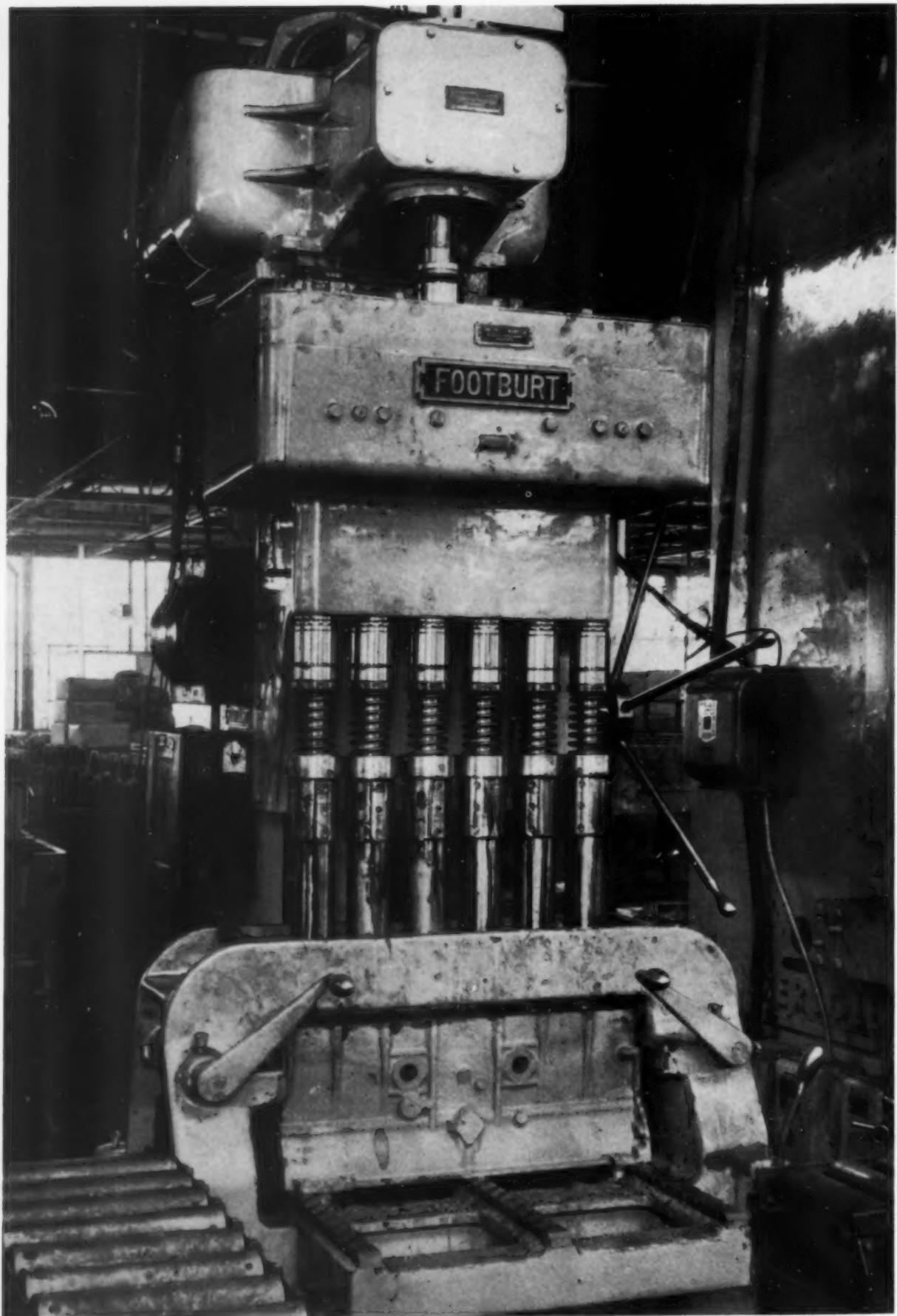
Spring ploughing on the Island of Orléans.



A familiar scene on the Island of Orléans, now connected with the mainland by a bridge, 2½ miles long.

*The harbour at Percé,
Gaspé Peninsula.*





This ponderous machine in the General Motors plant at Walkerville drills engine blocks.



CANADA'S MOTOR CAR INDUSTRY

by J. L. STEWART

IN 1903 or 1904, a group of small boys were playing in an unfenced field, along a road that led from the county seat. Out of the West came a dust cloud, and a great big noise—an automobile! It was the first they had seen. They watched with vast excitement as it swept past, carrying two men swathed in goggles and linen coats. It disappeared down past the school, and it was assumed that at the bottom of the hill it could make the corner without going into the river. The rubber tires, bigger than any bicycle tire, had made wide tracks in the dust of the clay road. The boys traced its tracks backward for half a mile, and speculated as to what had happened when the wheels had suddenly turned out of buggy rut and, as suddenly, turned back again.

Measured by history, nineteen hundred and three or four is but a moment ago. This is only 1937. One fancies, for instance, that between 1703 and 1737 the habits of the people of England changed but little, the landscape not at all. There were wheels and there were horses, and in many places there were oxen. Also, by that time there may have been sedan chairs for the very rich. But the child of 1703 probably saw no real changes in the life around him 30-odd years later.

There have been vast destructive changes in history, changes wrought in a brief time. But the constructive changes have been slow in their development, with the exception of the industrial revolution, started by the application of steam-power and the speedier development brought through the application of the principle of the internal combustion engine to the four-wheeled vehicle. The speed of the latter

change is due to the discovery that manufacturing costs can be reduced by mass production, carefully and expertly organized, and by the decision of early motor car manufacturers that their market should be broadened by keeping prices low.

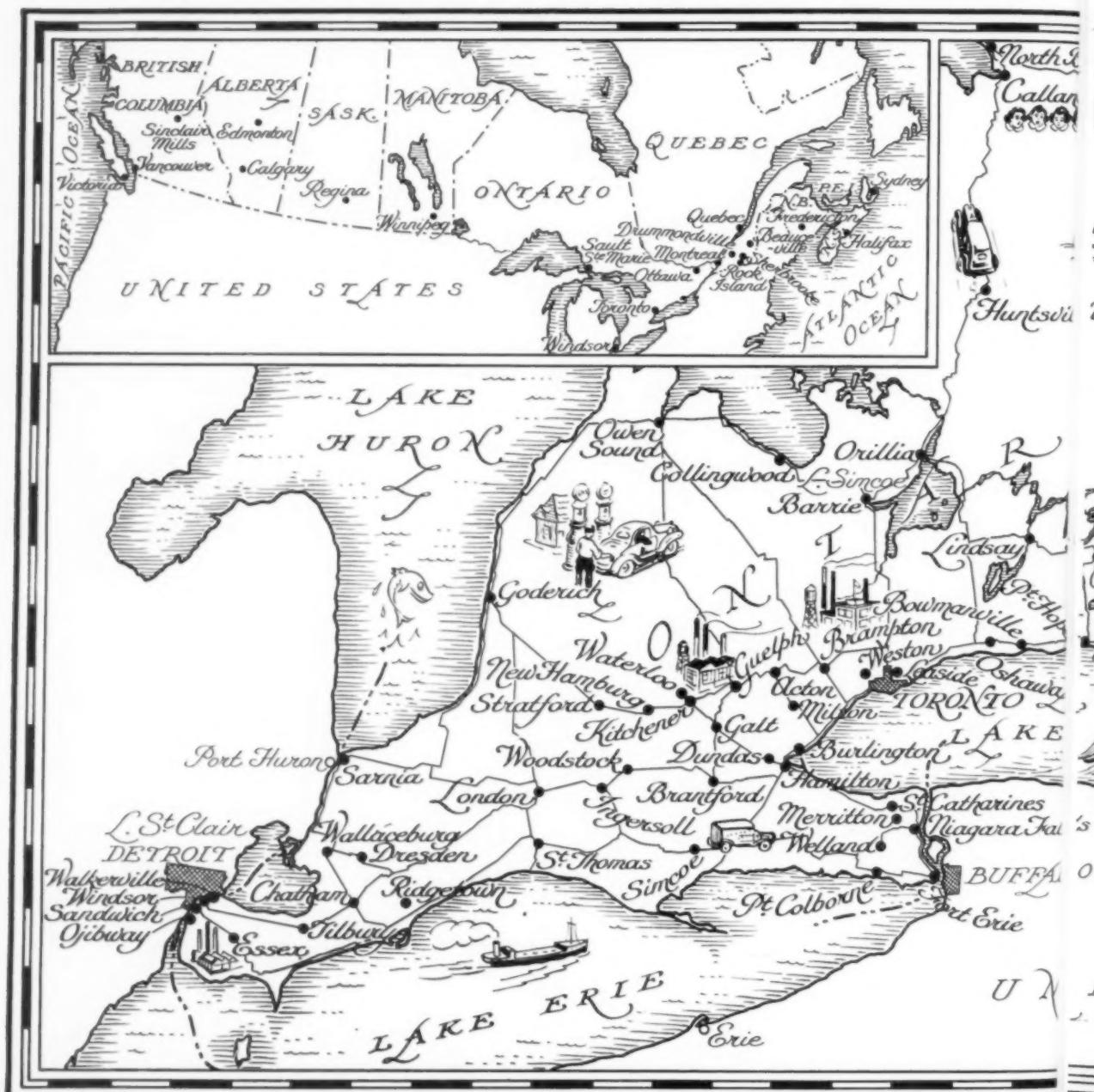
Perhaps there are Eskimos who have never seen an automobile, and there may be humans in other hinterlands equally ignorant. But, generally speaking, the motor car is as familiar to everyone in Canada to-day, as it was rare to those small boys on the village ball field in 1903.

The vast social changes wrought by the motor car is not the subject of this article, except to indicate the background of an industry which is worthy of study by anyone interested in the commercial and industrial development of Canada. The economic value of the motor industry to this Dominion is made evident by the recital of just two related facts, namely: Canada ranks second of all countries in per capita consumption of motor cars; and fifth in per capita production of motor cars, being outranked only by the United States, Britain, France and Germany.

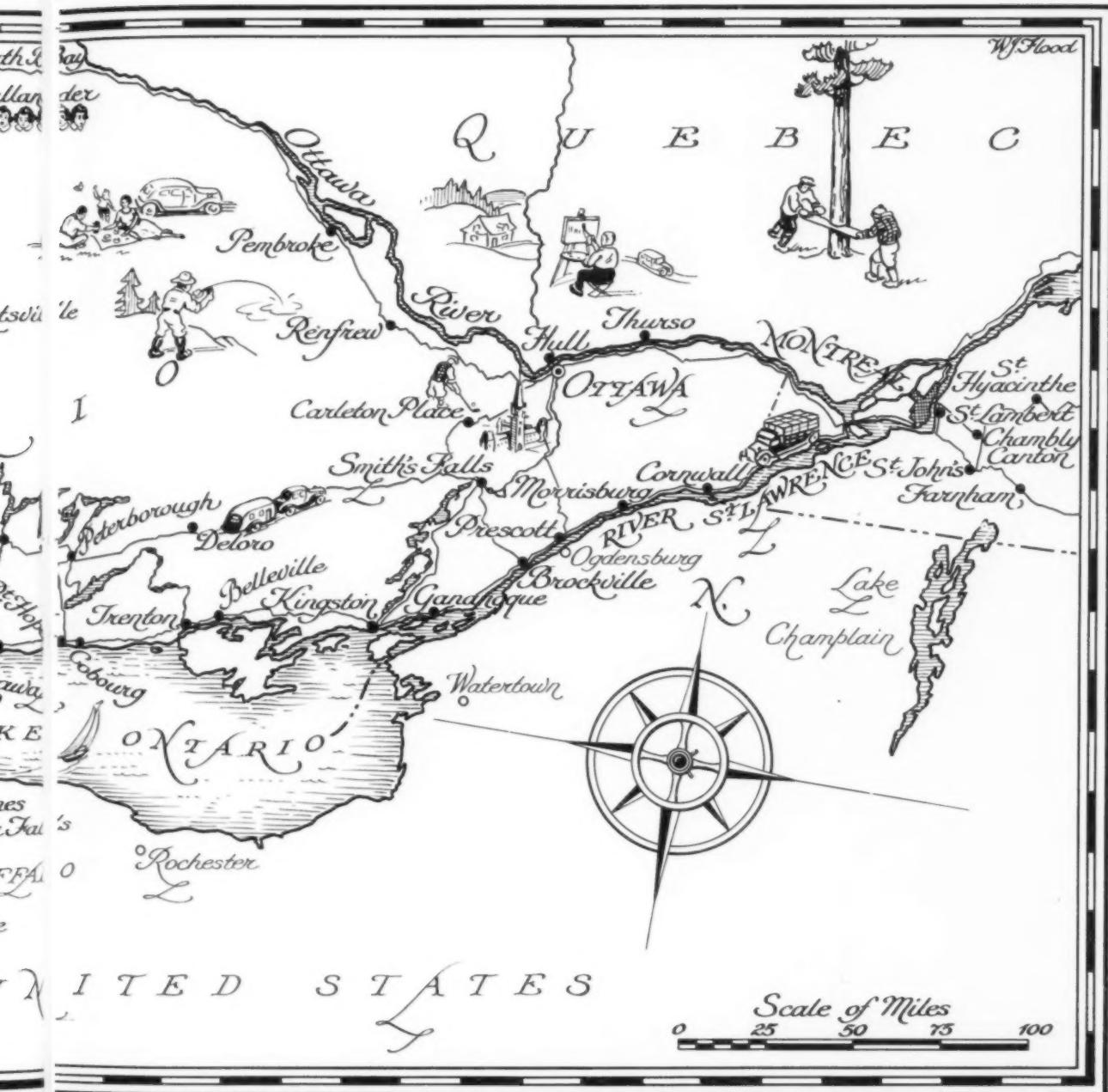
It is the production and use of automobiles, and the manifold industrial and commercial activities resulting from their production and use that this article reviews briefly.

The industry started in a very small way in 1904. The pioneers in this field were carriage-makers, machinists and bicycle manufacturers. Whether the cars were manufactured at home or imported complete, it could be said that, at this early stage, they were largely assembly jobs, with the more precise and intricate parts being imported.

Above—Automotive Building at the Canadian National Exhibition, Toronto, the only structure of its kind in an annual exposition devoted exclusively to the motor car industry in North America.



Every province in the Dominion supplies raw materials used in the manufacture of motor cars and trucks in this country. This map indicates the location of 325 factories in which finished or semi-finished parts and materials are manufactured prior to shipment to the five principal car manufacturing centres. These are established in sixty-four cities and towns throughout the Dominion of Canada. According to a survey, the value of purchases by car manufacturers in these 64 centres amounted to \$66,000,000 in the year 1935. Out of the earth, from the backs of sheep and goats, from the sands of the shore, and from the heart of the trees come the raw materials that make the modern automobile possible. Man, in a thousand different trades, takes these basic materials, and by his ingenuity transforms them into fabricated products. Deep down in the bowels of the earth, sweat-stained miners dig the iron ore and the coal to feed the roaring steel and iron furnaces overhead, while bare-footed natives take from the rubber plant the sticky, milky-white fluid that is destined to appear some day in the form



of an automobile tire. Under prairie skies, sheep and goats are shorn of their fleece that humming looms may weave upholstery, pleasing to the eye and comfortable to the body. Cork trees in Spain are stripped of their bark, while in Quebec pits, compressed air drills mine the asbestos for brake lining, clutch facings and gaskets. Cotton, picked by busy hands, is spun and woven for a variety of purposes. In huge electric furnaces at Arvida, Quebec, bauxite is transformed into aluminum ingots, later to be cast into cylinder heads, and forged and rolled into lightweight parts and stamping. Hardwood and lumber from northern forests are transported to the factories. Sand, limestone and soda ash, heated until they fuse, form glass; add a sheet of plastic and it becomes safety glass. From Canadian mines come the lead for storage battery plates, copper for ignition cable, zinc for carburetor and fuel pump parts, nickel that steels may be made strong, wear resisting paint pigment to make automobile bodies beautiful, chemicals to aid man in his various processes. From every civilized country in the world, from every province in the Dominion, come the raw materials that feed Canada's motor manufacturing industry.



National Motor Show of Canada, Toronto.

CANADA'S MOTOR CAR INDUSTRY

The domestic industry not only supplies the bulk of the home market, but it is a big factor in exports. Some forty countries buy made-in-Canada cars, regularly; the principal markets being Australia, the Union of South Africa, the United Kingdom, New Zealand, Spain, the Straits Settlements, British West Indies, British East Africa, Southern Rhodesia, British West Africa, Ceylon and Hong Kong.

There are eleven motor vehicles in Canada for every 100 persons. The United States leads with one car for every five persons, but Canada is away ahead of every other country. Our proximity to the United States is doubtless a determining factor in our position. Proximity makes our living standards similar, and proximity has enabled our domestic manufacturers of motor vehicles to form alliances, which have given us the advantages of mass production of parts in that country. As these can be produced economically in no other way, the result is that prices of cars are lower in Canada than in any other country, except the United States. This proximity also has enabled us to build within the Dominion an industry which, in its ramifications, is of benefit to every other industry in the country.

The chief automobile plants are located in the Windsor area (including Chatham and Tilbury) and at Oshawa. In 1936, these plants, which turn out completed cars and trucks, employed about 16,000 persons and paid something like \$22,000,000 in wages and salaries.

But the recital of these facts falls far short of telling the story of the economic value of the motor industry to the country. A report of the tariff board indicated that manufacturers of parts, in 1934, had employed an average of 12,504 persons, or 54 per cent. of the total number employed in the combined automobile and parts industry in that year.

While there are only half-a-dozen companies engaged in the manufacture of automobiles and trucks, there are no less than 220 plants, in seven provinces, supplying parts and materials. The location of these centres is indicated in the accompanying map.

A questionnaire, for 1935, answered by 162 of these parts manufacturers showed their sales to have been \$66,000,000; while 155 companies reported their monthly average employment as 14,171, with wages of \$15,834,000.

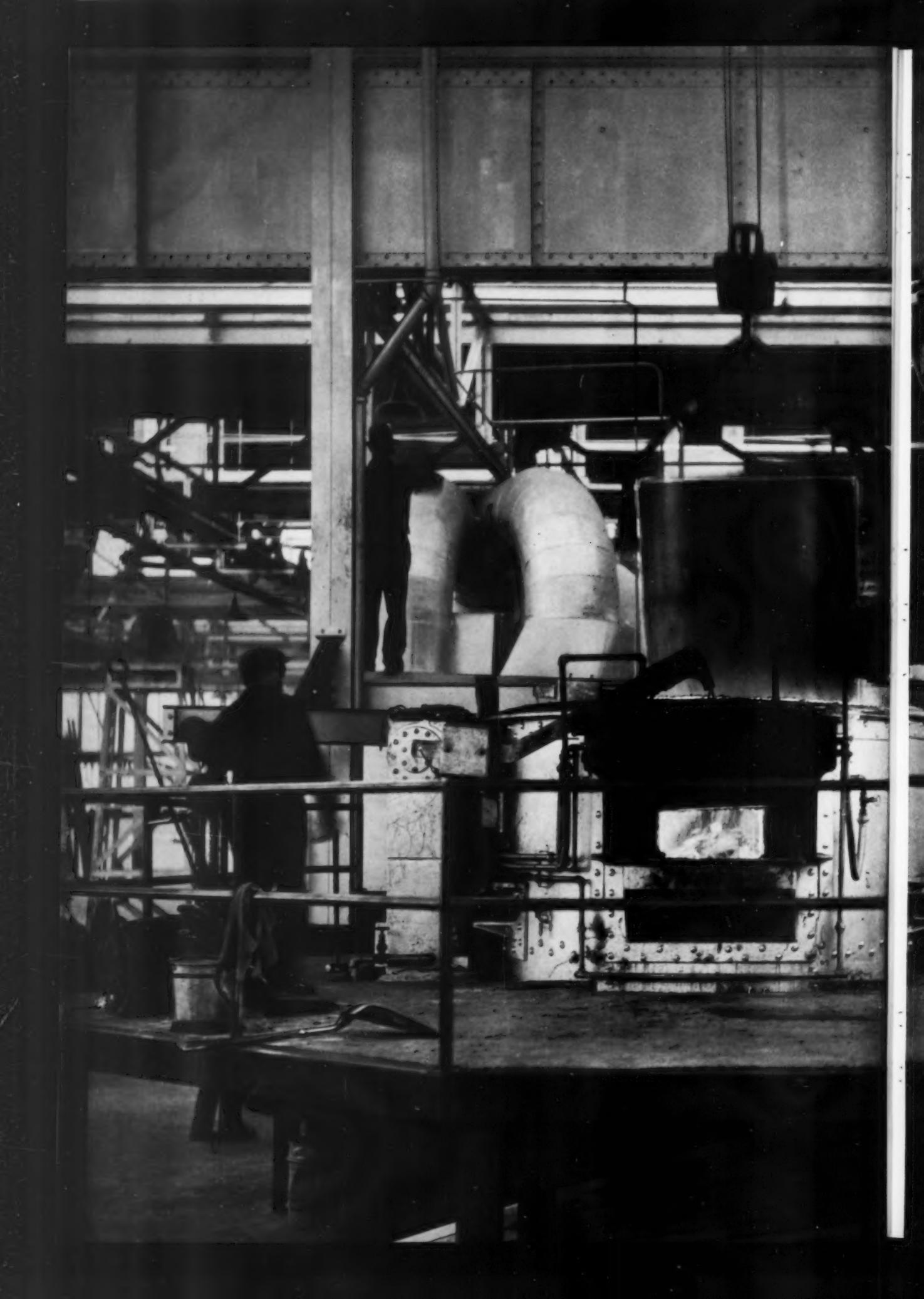
Yet, the citation of the employment provided, and the total expenditures of the automobile industry, including parts industry, immediately dependent thereon, falls far short of presenting the complete picture. The motor vehicle industry is so bound up in the social, commercial and industrial life of the country, that there is scarcely an industry that does not benefit either directly or indirectly.

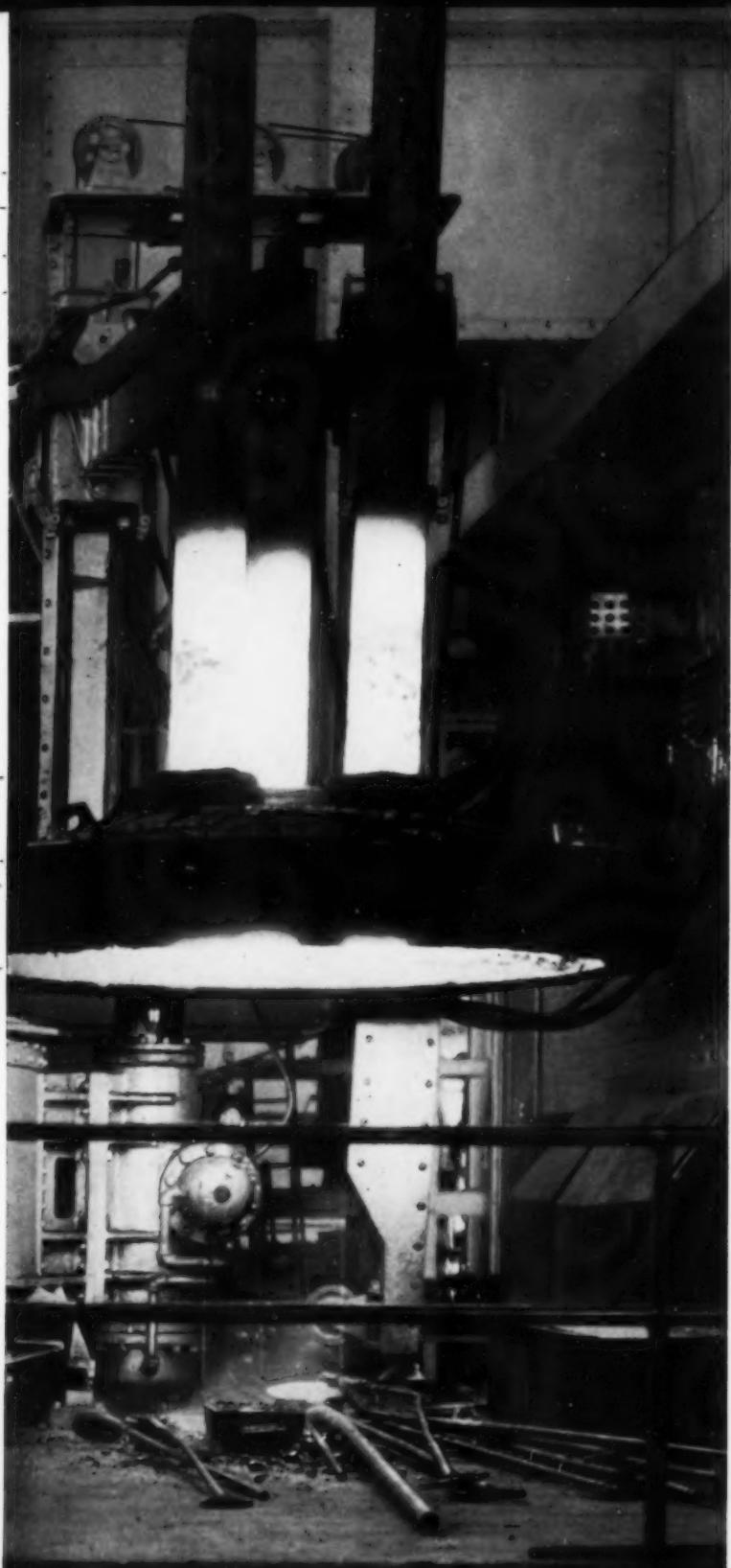
Readers of market reviews have long since become aware of the dependence of the steel industry on the motor industry. Steel rails and I-beams for our greatest buildings still may bulk large in the unfulfilled orders of steel mills, but the motor industry in the last decade or two has become an equally important factor in steel's prosperity; a factor, moreover, which, at least twice, has demonstrated its capacity for a quicker recovery from depression than either the railroads or the building industry.

So it is in other industries. The asbestos mines of Quebec Province produce material for brakes, an important part of that industry, which did not exist when "asbestos" was known principally as the material for the fire curtain in our best theatres. Lumber from the forests of British Columbia still goes into a few parts of many bodies for passenger cars, and good seasoned stuff is required for bodies for trucks. Rubber at one time was mainly used for tires and for insulation in ignition systems and lights. But latterly, its uses have grown. Cotton goes into tires. Fifteen yards of fabric are needed for the upholstery of the average car, and this entails the use of much grade "A" Angora wool. One might mention also the paints and enamels and lacquers, the vast quantities of glass, the copper wiring, aluminum, nickel and many other basic metals which go into the scores of different steel alloys. Then too, there are a few synthetic materials, such as bakelite.

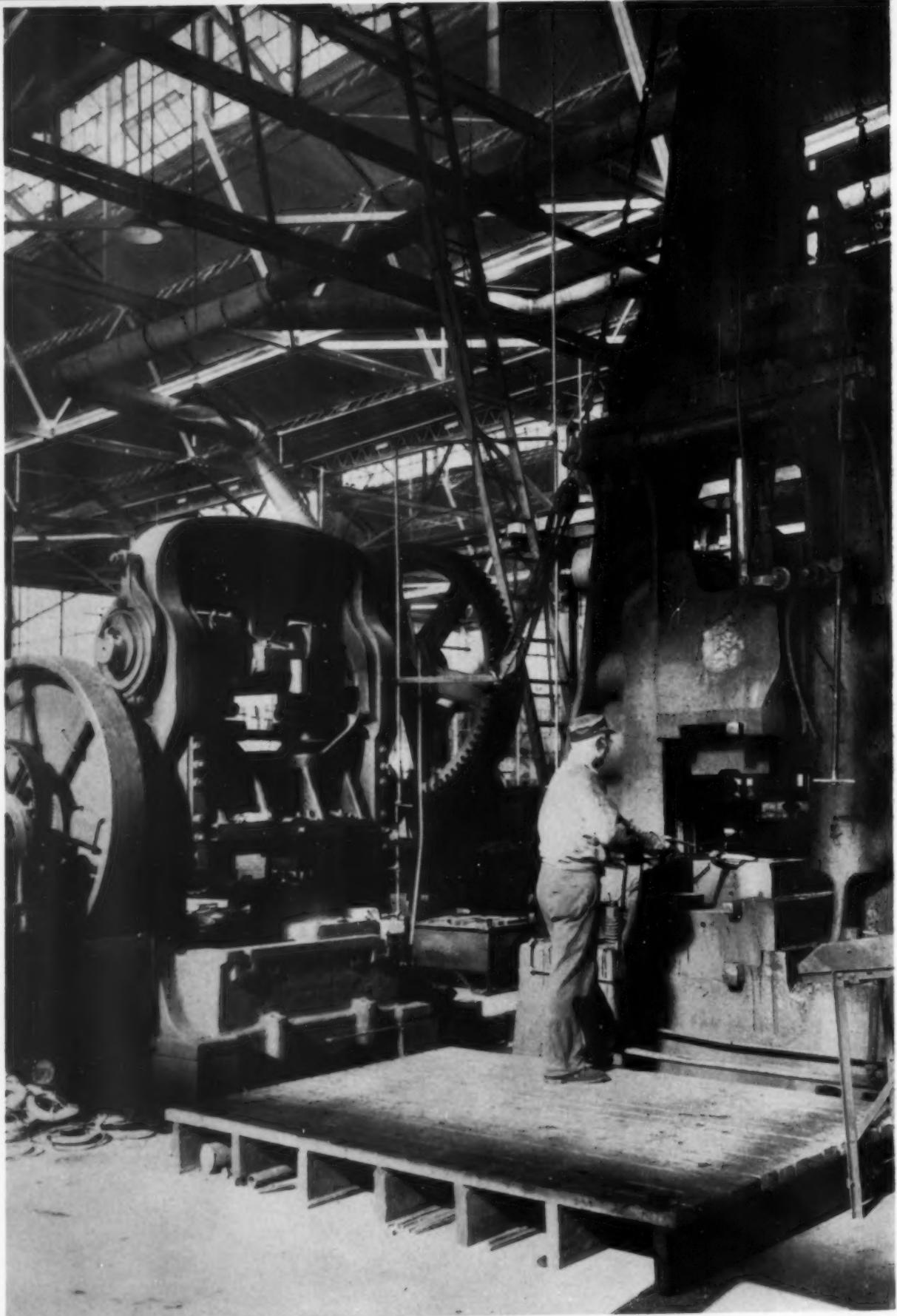
One does not need to be very old to remember that automobile lamps once were just carriage lights or used acetylene. To-day, a substantial part of the output of incandescent lamp factories is for the automobile trade. The trend away from the open car has perhaps curtailed the demand for leather for upholstering, but the hide still is an automobile part.

There is a vast quantity of fibre-board, made from wood pulp, used in foundation





Five-foot electric furnace, which produces about five tons of molten alloy steel at 3000 degrees in 82 minutes for casting into crankshafts. This photo shows the furnace top swung back, the 10-inch carbon electrodes glowing, and the bucket dumping raw metal into the furnace. When the electric current is turned on, the electrodes consume nearly 3000 horsepower in melting the raw metal.



Four-inch billet, after a heavy hammer has forged it into a ring gear.

side panels. Even the paper-making industry and newspapers and printers are beneficiaries, for automobiles are to-day among the most-advertised products in daily papers, magazines, in circulars and catalogues. And when radio was developed it looked not in vain for revenue from an older, but still young industry.

The automobile manufacturers are constantly endeavouring to increase the amount of Canadian content in their products, either by extending their own manufacturing operations, or by developing new sources of supply. During 1936, the automobile manufacturers in Canada spent \$3,010,655 on plants and equipment and, in 1937, present plans call for an outlay of \$8,150,000 for that purpose. Large capital expenditures are made annually for tools and equipment—modernization is carried on constantly in good times, and in bad. In estimating the influence on national employment, this must be taken into account. The employment given to Canadian workers engaged in the actual manufacture of motor cars is regularly supplemented by these secondary activities as the plants continue their normal growth. In 1936, Canadian automobile manufacturers spent over sixty million dollars in Canada; in payment for purchases of materials and parts, and for services, including transportation.

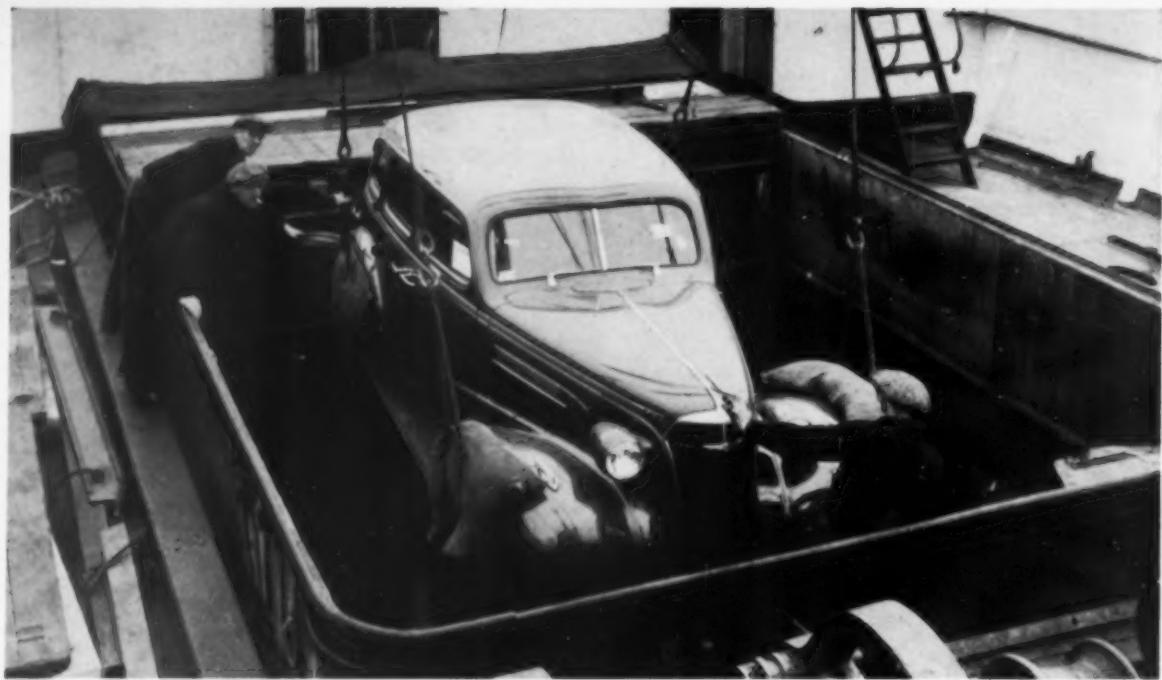
A few years ago there was a great controversy between railway spokesmen and trucking interests, the railways alleging that inter-urban trucking on the highways constituted unfair competition. The talk has been allayed by the sensible statement of a Royal Commission that both railways and trucks have their place in the economic sun. The retrospective person might go farther than that, and suggest that if Canada had not allowed her automotive industry to develop, the national development would not have been so great, with the result that growth would have been lessened and railway business would have been behind its present levels. Now, the automotive industry and its dependent activities are among the best customers of the railways and other transportation services. The bulky raw materials of blast furnaces and steel mills must be assembled by rail and water transportation; hence rail and water transportation benefit to the extent that the iron and steel mills benefit from the automotive industry.

Before gasoline became a universal fuel, the oil industry was a pygmy compared to its present size in this Dominion. The oil industry is one of the greatest customers of the railways. At hundreds of way-stations throughout the Dominion one may see storage facilities of the oil companies for each little district served. No such facilities were needed when the industry mostly manufactured and purveyed kerosene, lubricating oils, signal oil and axle grease.

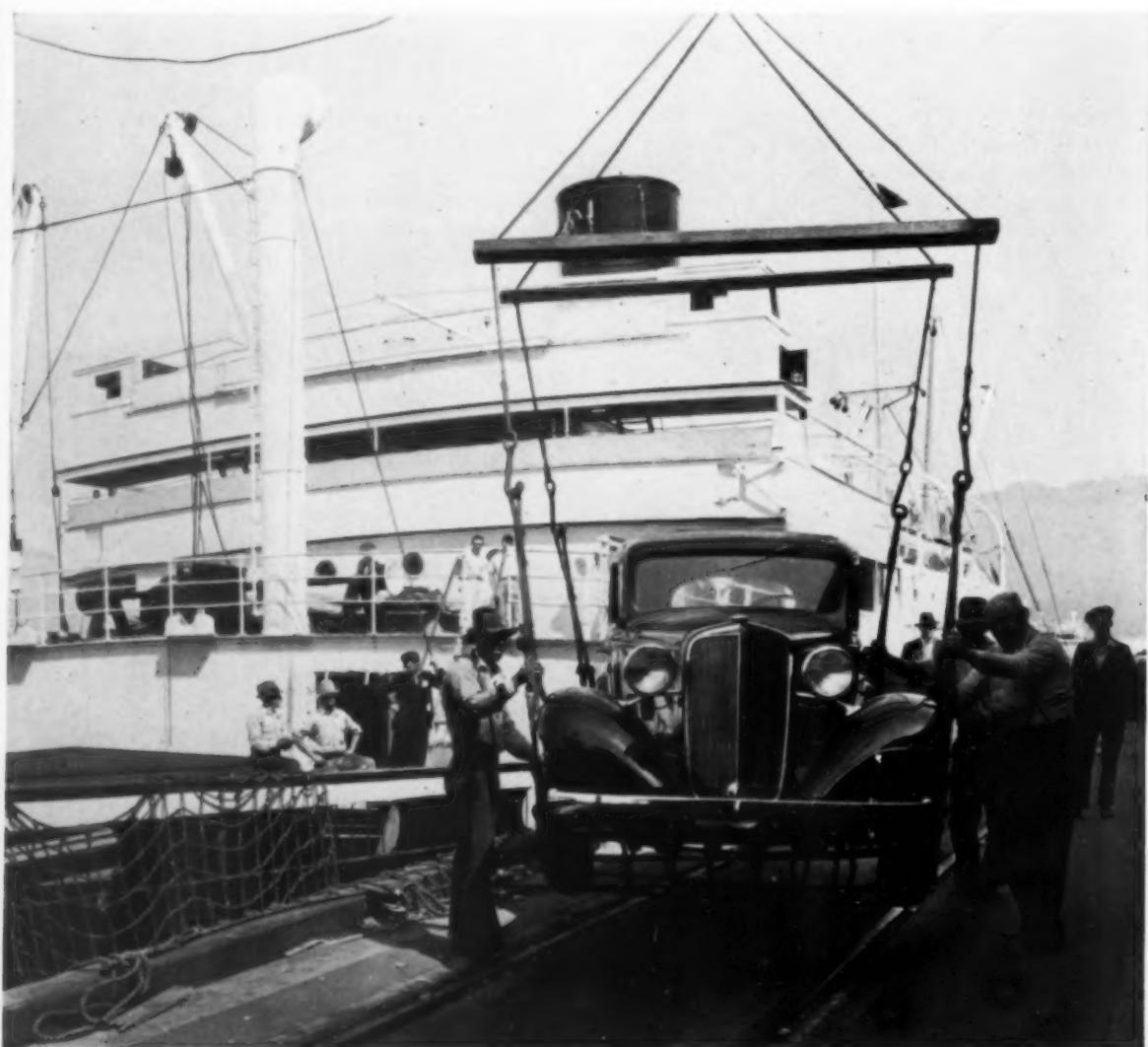
Nor should we overlook the fact that the automotive industry, is also responsible for the creation of many thousands of new jobs in the servicing of the 1,200,000 motor vehicles in the nine provinces and the Yukon. In 1910, in this writer's home town, the only place where one could buy gasoline was from a shed in a lane, and the purveyor was not always to be found, as he was the local fish and game inspector. To-day, there are probably 25,000 places in Canada where gasoline can be had, and other servicing for the motor car obtained. It is an entirely new business, growing out of another new business, and is more important than the smithy shops, economically, as the motor manufacturing industry is more important than the old carriage industry, which has almost disappeared.

There is hardly a field which has not been affected by the motor industry. Take banking for example; a new field of banking—installment financing—has been developed through this industry. In 1934, the amount of installment financing carried out through finance companies was \$40,000,000, involving the purchase of 100,000 automobiles, of which 63,000 were new vehicles.

It might be said that no business has escaped its benefits, unless it be the village harness maker. The newspaper gets more advertising. The general store draws trade from a wider area than before. The doctor is able to make his calls more expeditiously to relieve suffering and save life. The manufacturer of all classes of goods can reach his market while the goods are new and fresh. The ultimate consumer's personal shopping area has been materially extended. Whole cities have changed their complexion. Suburban areas are now developed in advance of street-railway and bus extensions, instead of having to wait until these have been



Canadian cars are shipped to many countries, both British and foreign. Upper photograph illustrates loading operations at Halifax, the automobile being en route to England. Lower photograph shows a car being unloaded at Vancouver.



provided. Urban transportation systems can experiment in building traffic instead of being committed in advance of known demand to huge expenditures for lines and equipment.

The masses have learned to play golf, solely because of the motor car, which makes country club areas accessible. All sorts of transportation problems, which were insoluble before, are no longer problems. The summer cottage, for instance, is much more useful to the family because of the motor car, whether the retreat from the city in summer is a half-hour or a half-day, via highway, from the office. City markets are much more accessible to the farmer than formerly, when the farmer was dependent solely on the railway.

Two other industries have been developed entirely because of the motor car. Road-building and maintenance is one; the tourist trade is another. The first permanently surfaced, inter-urban road in Canada was the 45 miles of concrete between Toronto and Hamilton, built in 1916. To-day, first-class highways stretch in every direction in Southern Ontario, and road-building in every other province has become a major industry, providing employment for many thousands. There are 95,000 miles of roads in this country, which rank as improved—varying from the erstwhile quagmire of 1905 that has been surfaced to the modern four-lane paved highways now beginning to stretch out from the larger cities.

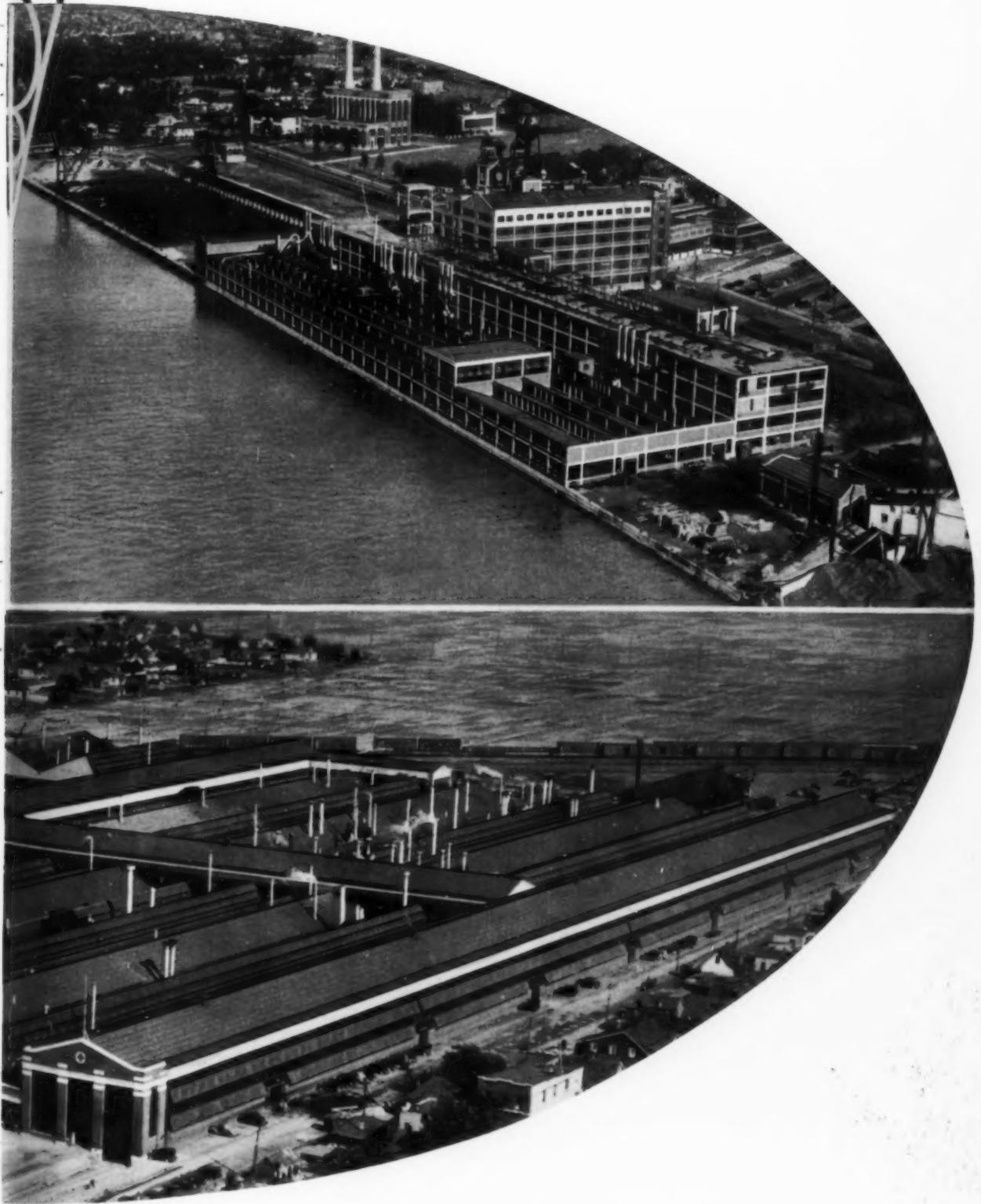
The automobile brought the roads, and the roads—it may be said with a bow to the quintuplets and other natural wonders—have brought the tourist traffic. Canada is becoming known, well and favourably, to hundreds of thousands of tourists, most of whom come by motor car from the United States. These tourists, in 1937, will spend upwards of \$300,000,000 within

our borders. In 1936, the estimate of the value of this trade was \$275,000,000, a great gain from year to year, which thoroughly justifies our annual expenditures on provincial highways of perhaps \$60,000,000. Then there are various indirect levies accruing to Dominion and municipal governments, ranging from sales and excise taxes, to the taxes on garages and other buildings used by the industry and vehicle owners. But, as a source of direct taxation, as reliable as any provincial treasurer could wish, the automobile is without a peer. To-day, the registration fees and gasoline taxes collected are a major revenue for every province. These levies range from 19.6 per cent. of total provincial revenues in Manitoba to more than 44 per cent. of provincial revenues in Ontario in 1934, and the percentage may have risen perceptibly in more recent years.

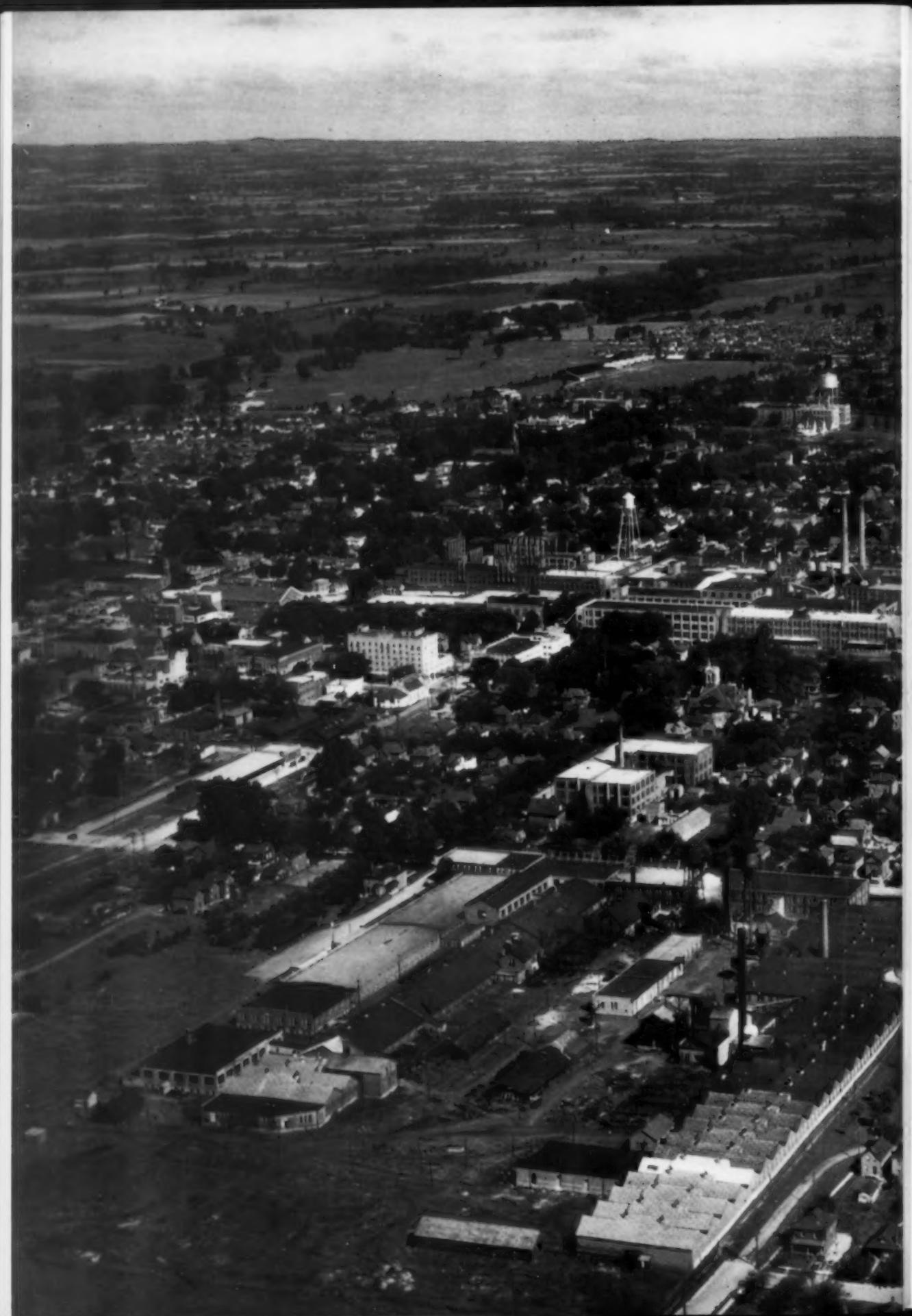
A recent press survey revealed that Canada's national income for last year showed an estimated increase of four hundred and fifty-millions. The sources of the country's total earnings were broken down for analysis, and gains were shown all along the line. But manufactures, now approaching in value the billion and a-half mark annually, take first place by a considerable margin. The 1936 estimate of the value of Canadian manufactures was \$1,467,675,000, with agriculture next, at \$746,968,000, followed by the mining industry with \$376,013,000. The automotive industries are playing a double role in this Canadian development. Their output is one of the most important items in the total of manufacturers, and they, as a group, make up one of the most important single markets for the products of many other Canadian factories. Indeed, it has been truly said that "the complete process of producing automobiles is a great national co-operative job."



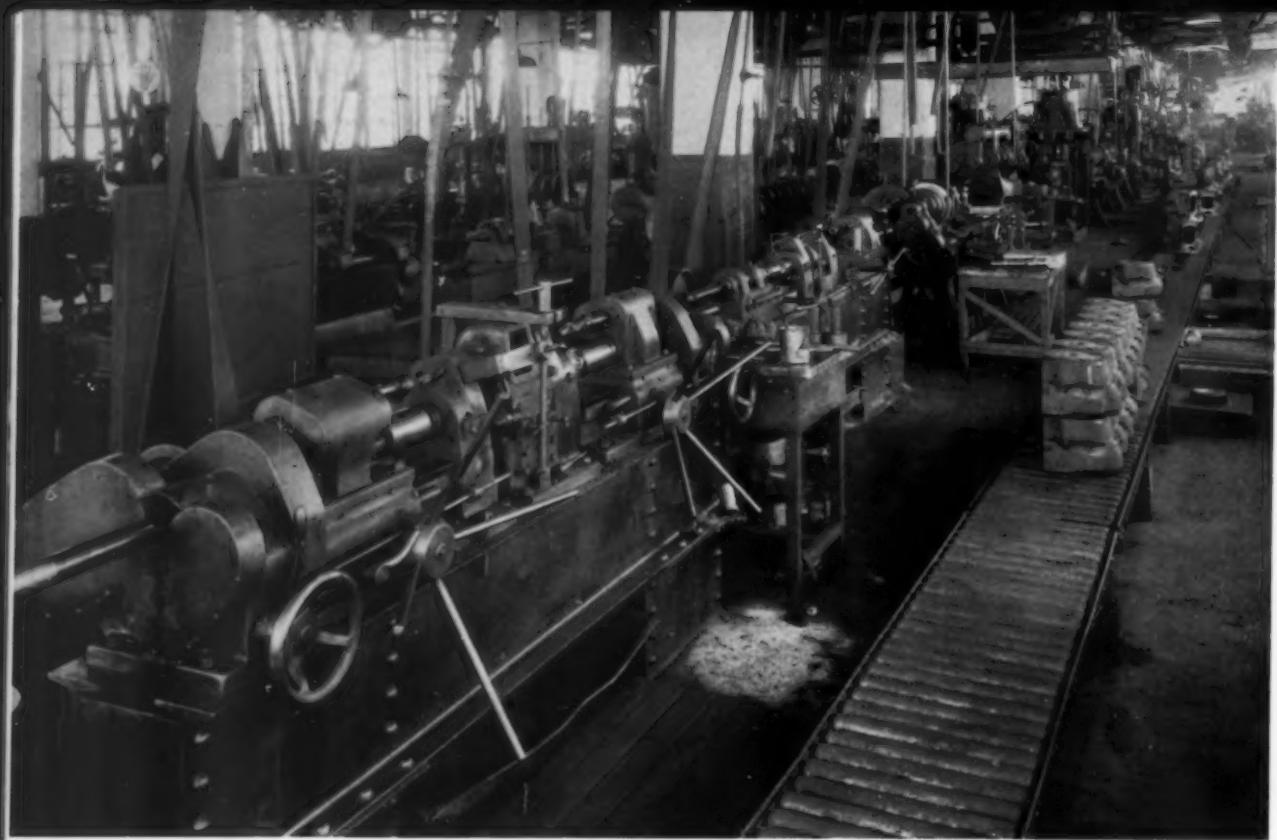
Aerial view of the plant at Windsor, Ontario, of the Ford Motor Company of Canada, Limited. The docks is the power house (left), now in process of expansion and modernization, and farther A new body-building and final assembly plant is being built at a cost of \$3,500,000 across the will be connected with power and service lines, together



Administration offices and the present body-building plant front on the Detroit River. South of to the south is the main manufacturing plant (below), which will also be extended this season. right-of-way of the Essex Terminal Railroad from the present manufacturing plant. The two with conveyors, via a subway beneath the railroad.

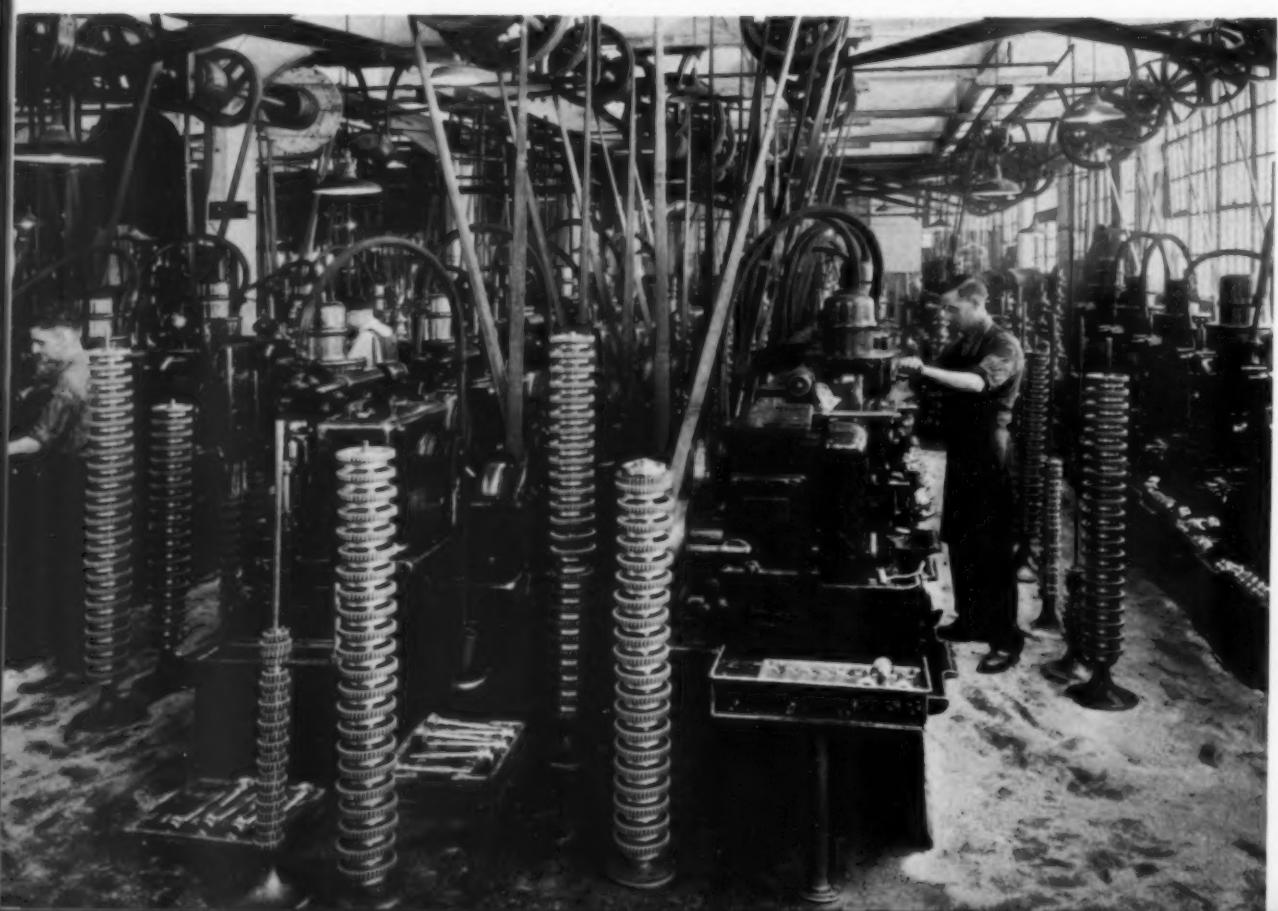


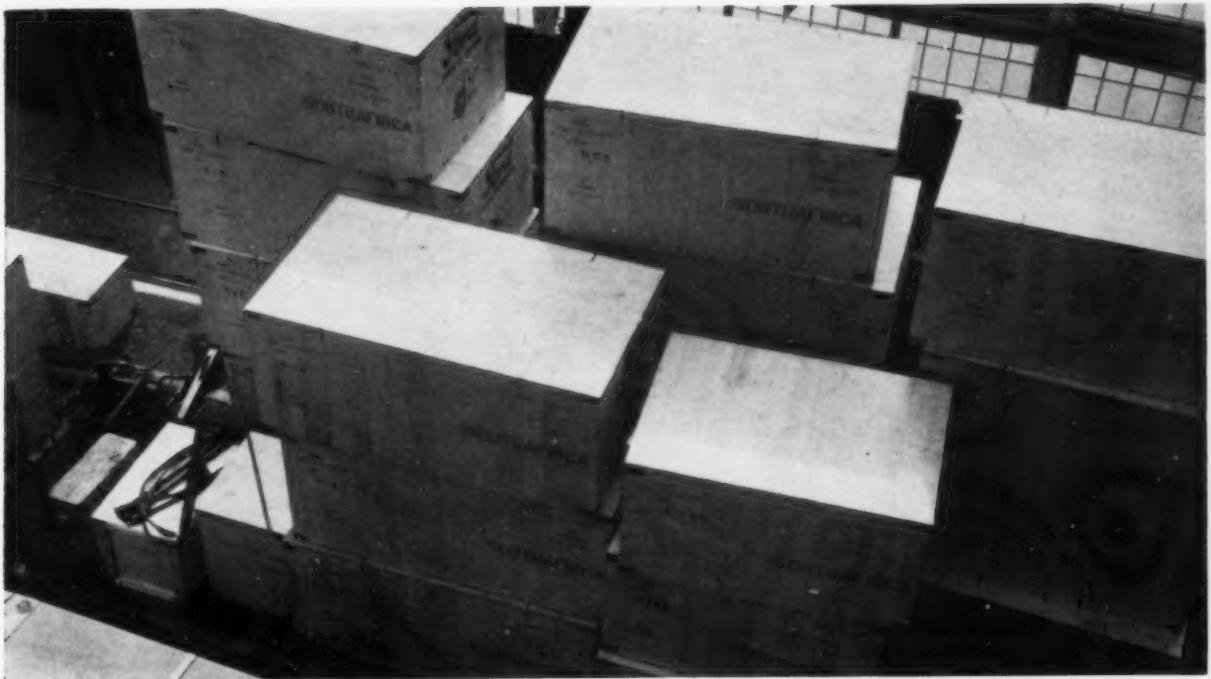




Typical scene in one of the largest parts manufacturing plants.

A battery of high speed gear-shapers cutting automotive transmission gears.

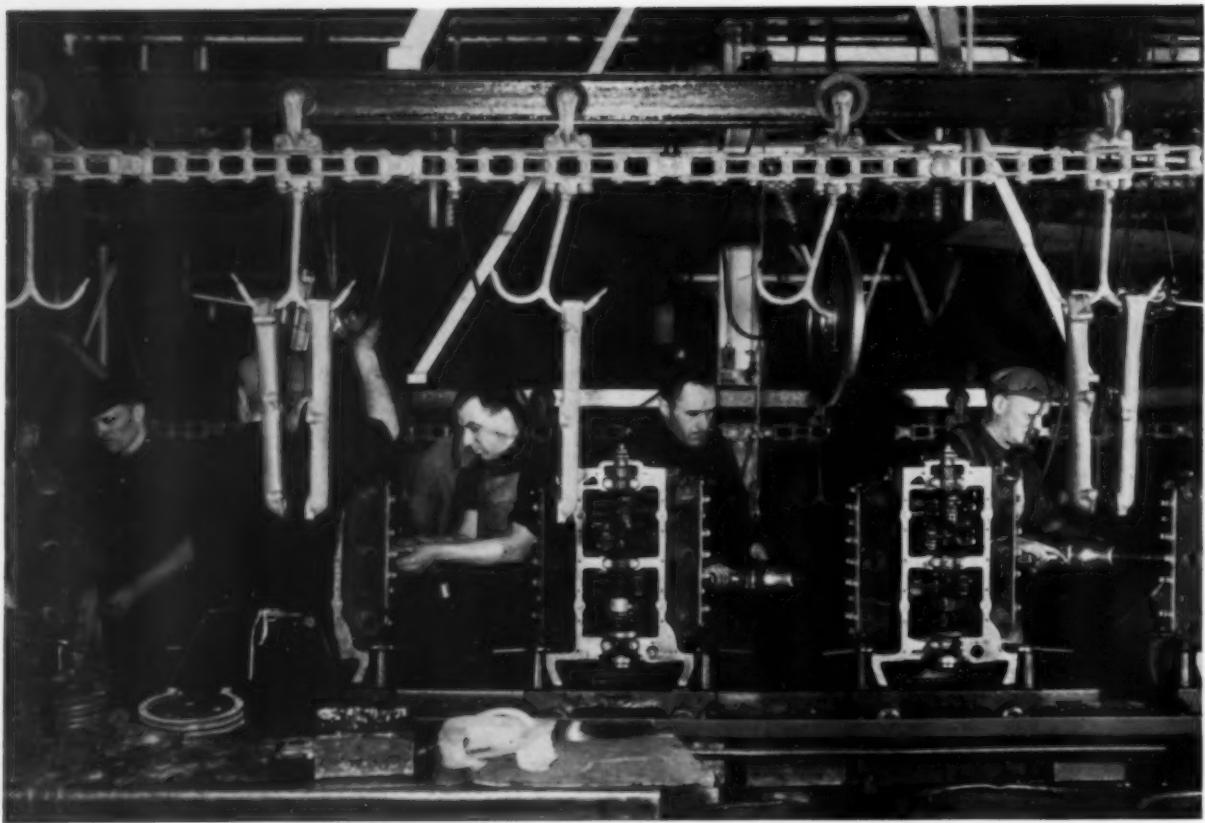




Most automobiles made in Canada are used here, but many thousands are boxed up as neatly as bonbons and shipped to scores of countries. This lot are now serving their ultimate buyers in South Africa.

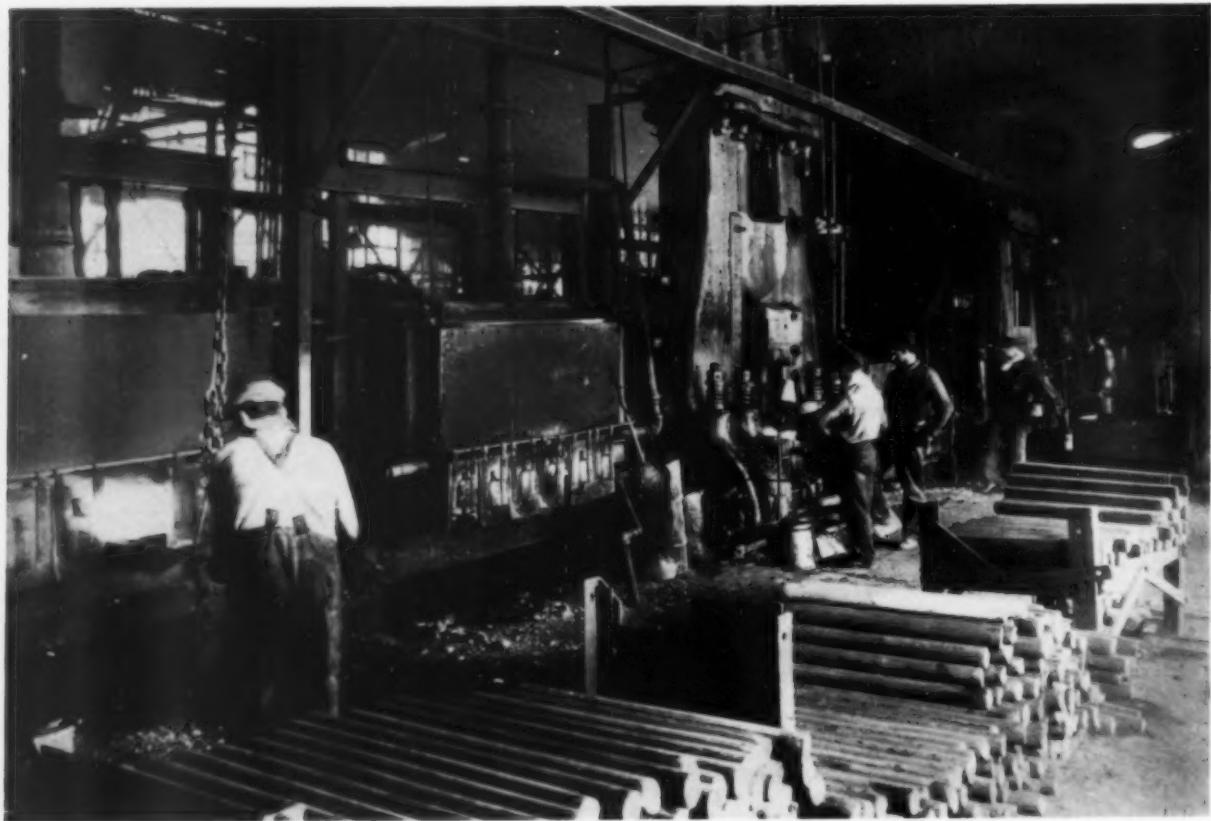
Trimming department in the Chrysler plant at Windsor, seat and back material being sewn prior to stuffing. On the extreme right may be seen the cloth being marked for machines to follow.





Group of workmen engaged on engine assembly in the Ford plant at Windsor, Ontario. An overhead conveyor brings needed parts at the right moment. The work of assembly is carefully inspected by trained men right along the line.

Steel forgings used in the production of parts for automobiles are made from steel bars, heated in furnaces and then formed to the required shape in dies by steam hammers, board hammers or forging machines. This photograph shows steel bars in process from trucks to the furnaces and dies in a steam hammer.

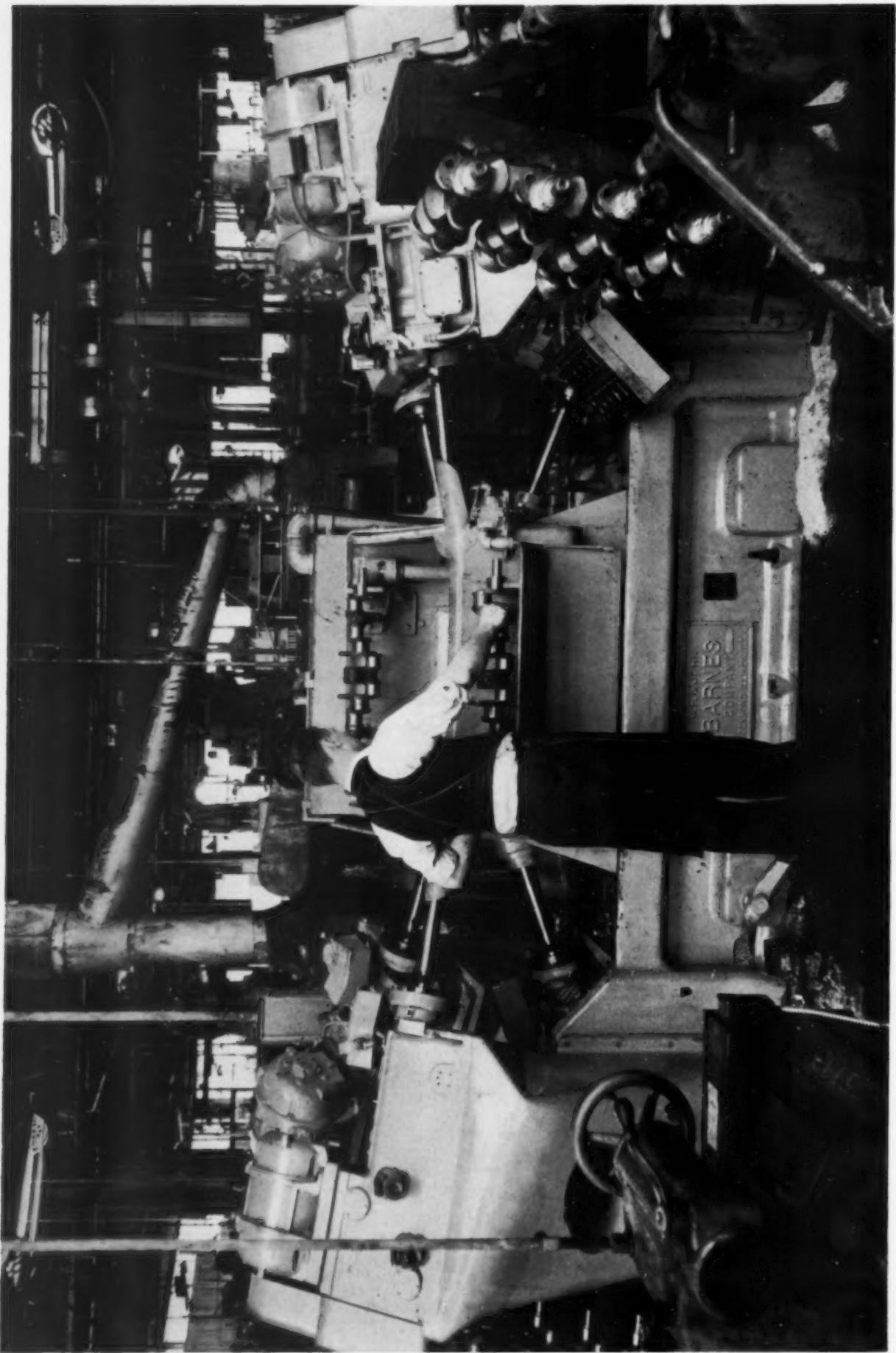




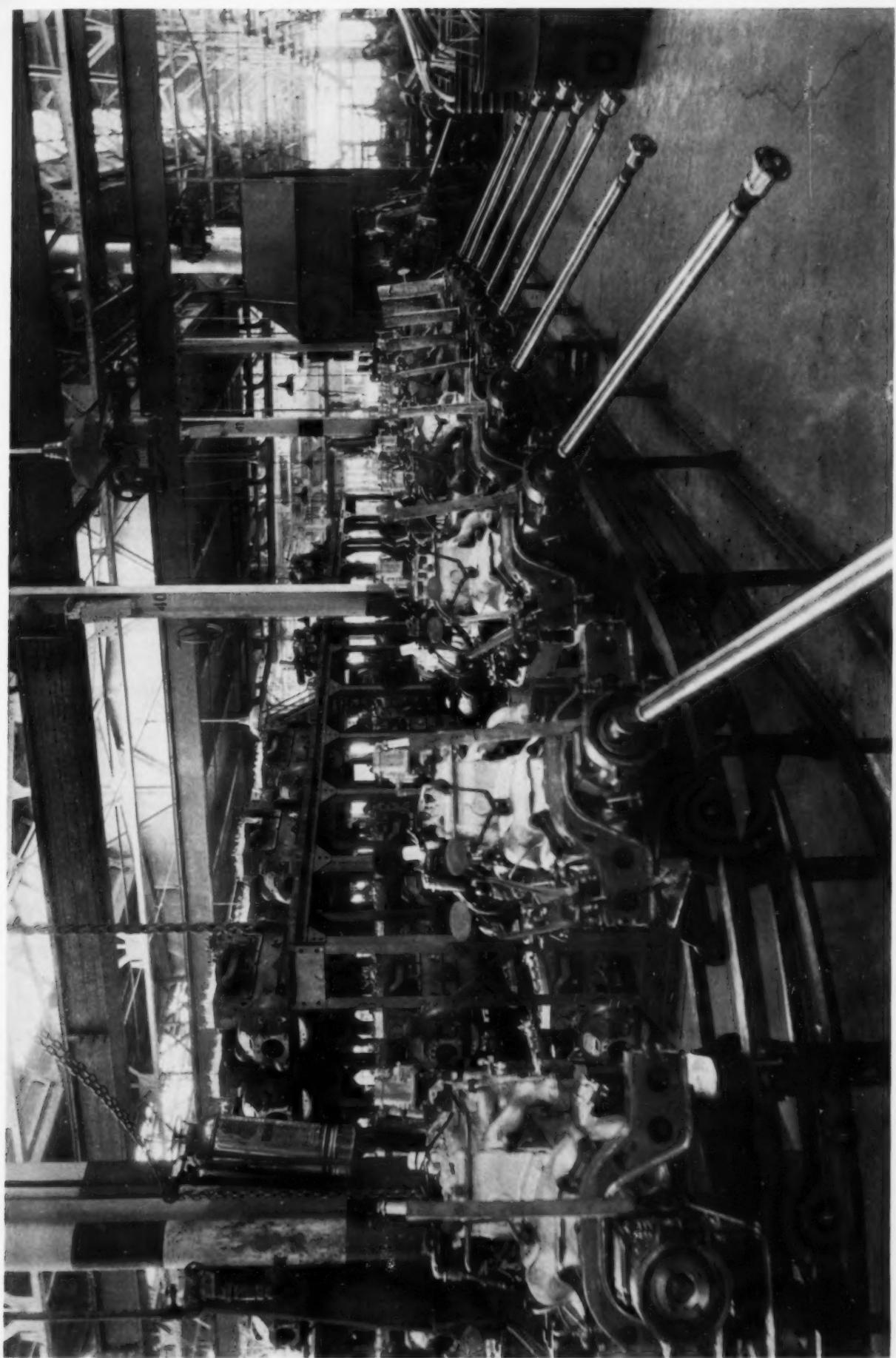
In the Hudson plant at Tilbury, Ontario. Final polishing of the body before it meets the chassis.

Perfecting the liaison between the chassis and its motive power. .

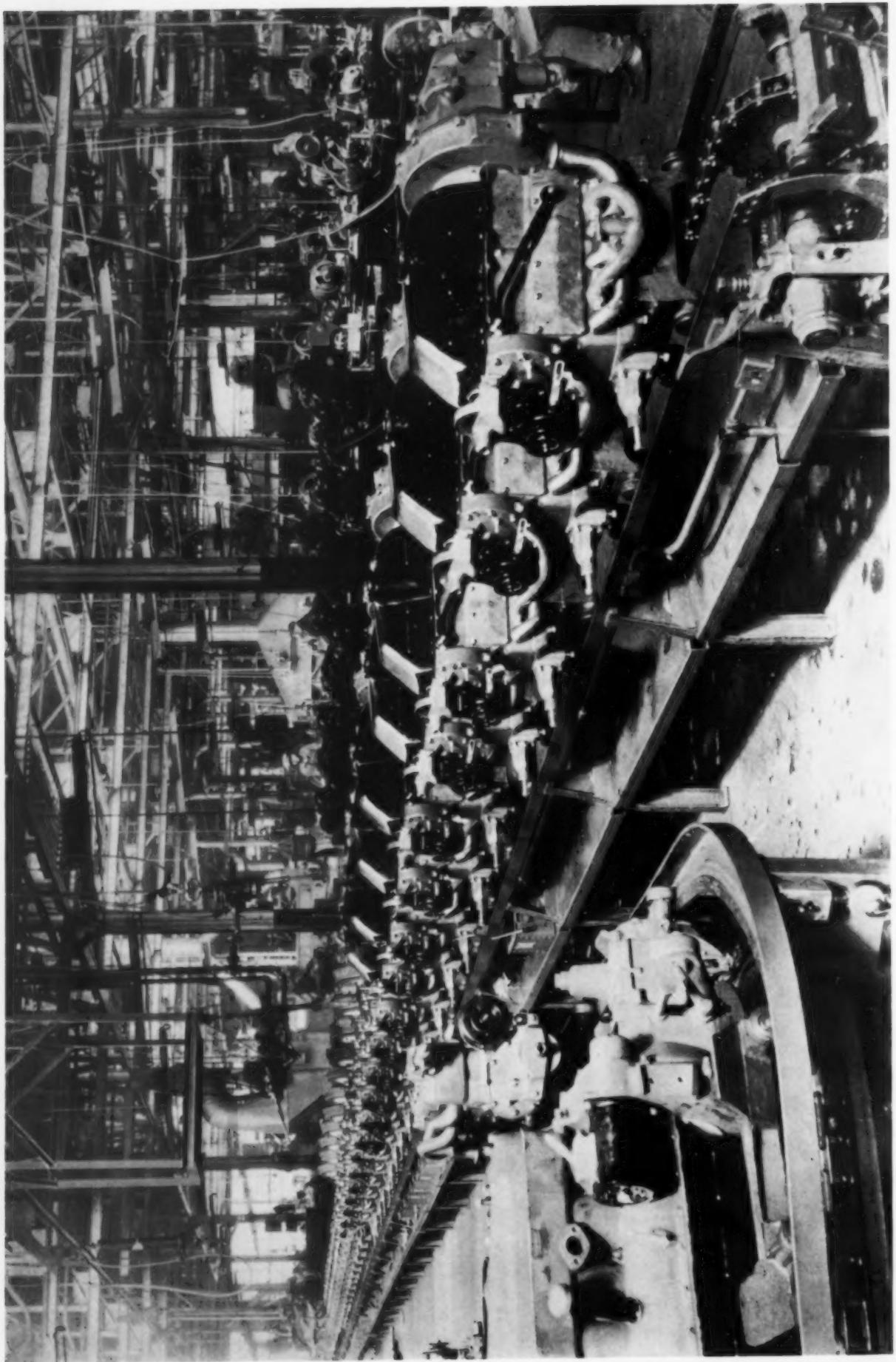




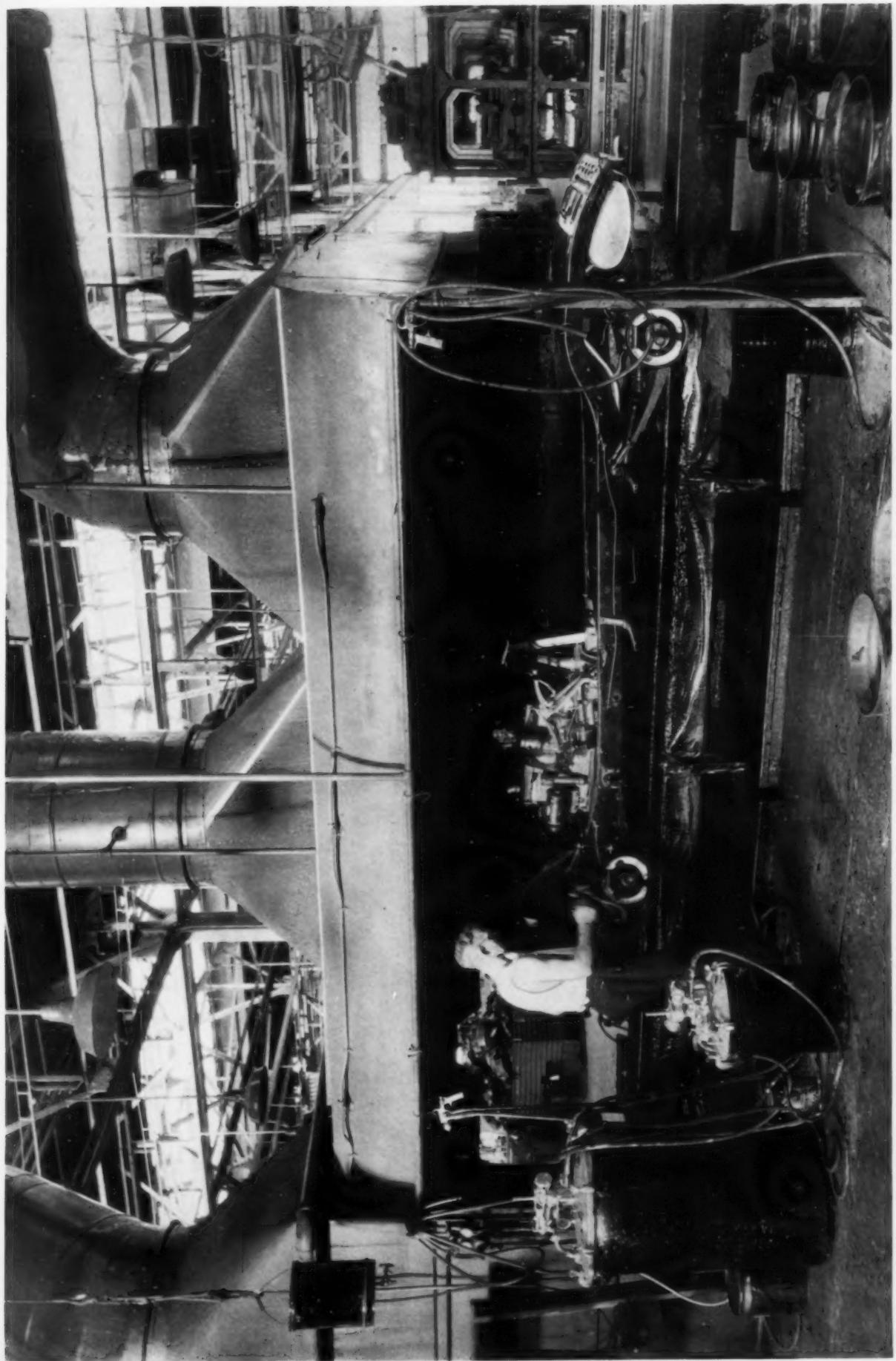
Unnecessary weight in an automobile is inefficient. This picture shows the crankshafts of Chevrolets being drilled.



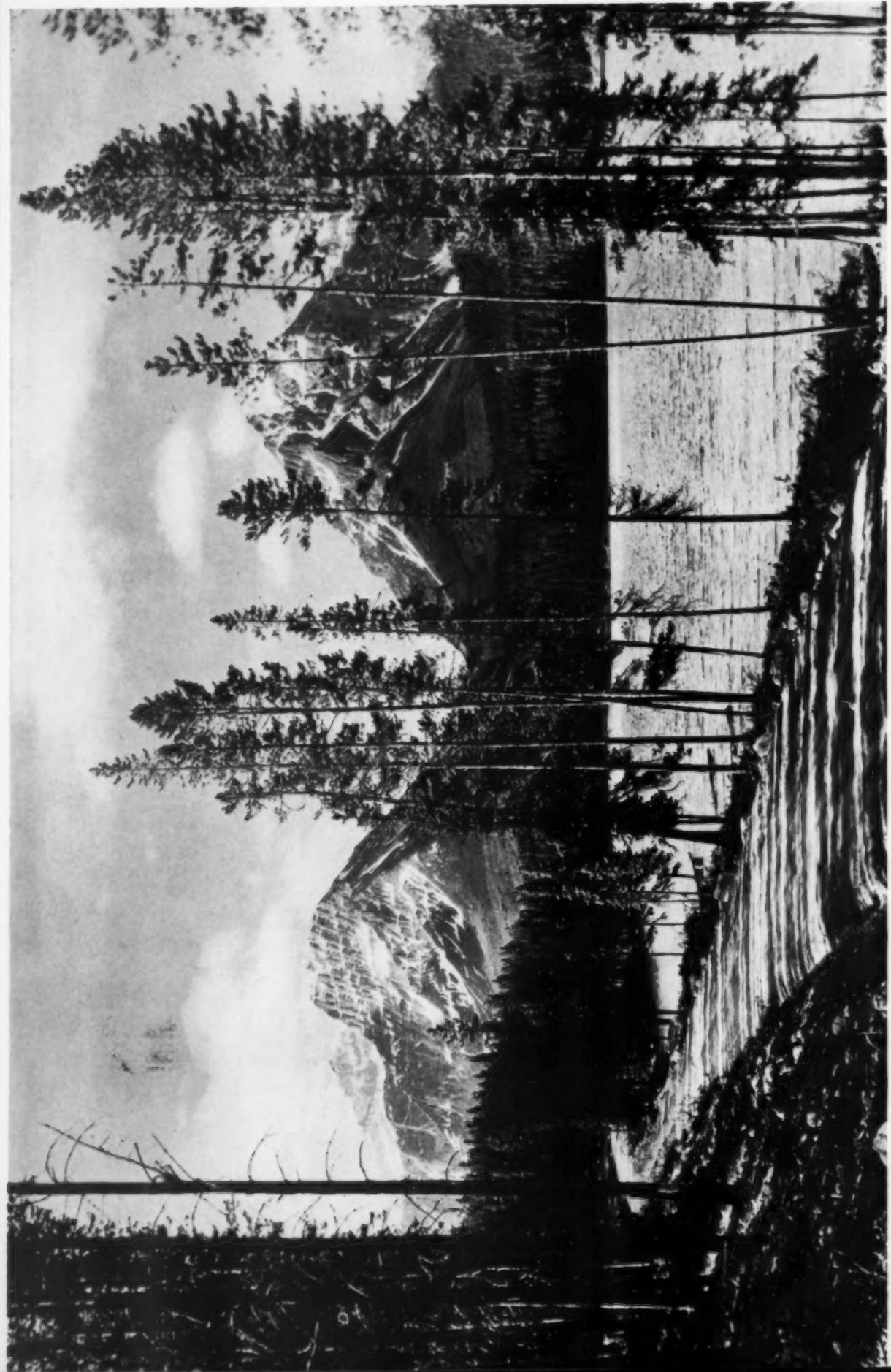
The basic principle of the assembly line is the same in all automotive plants, but details vary. Above is seen the Chrysler method of assembling motor and drive shaft at Windsor.



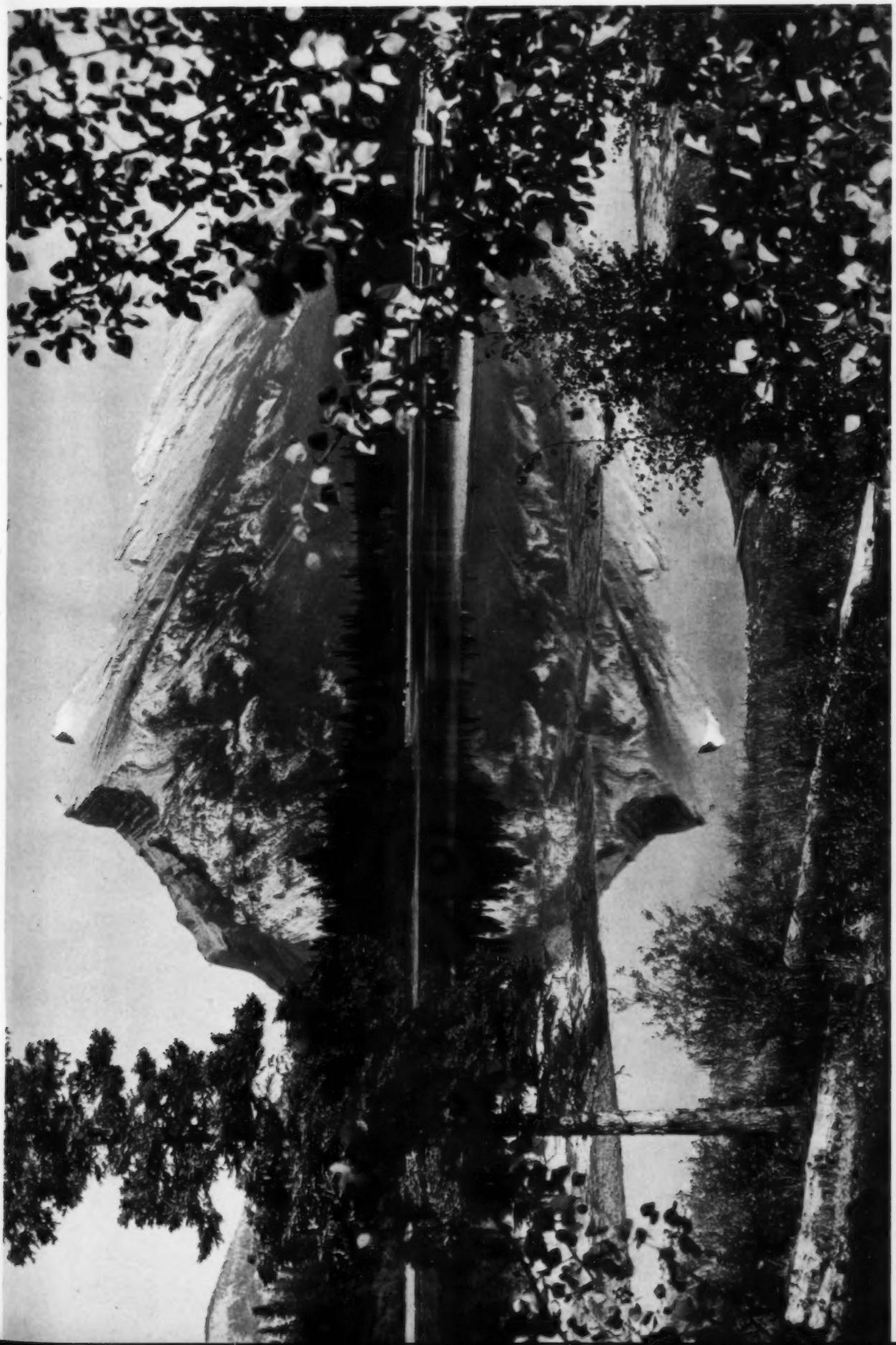
Motor assembly line.



Frame and springs receiving their last coat of paint before entering the oven.



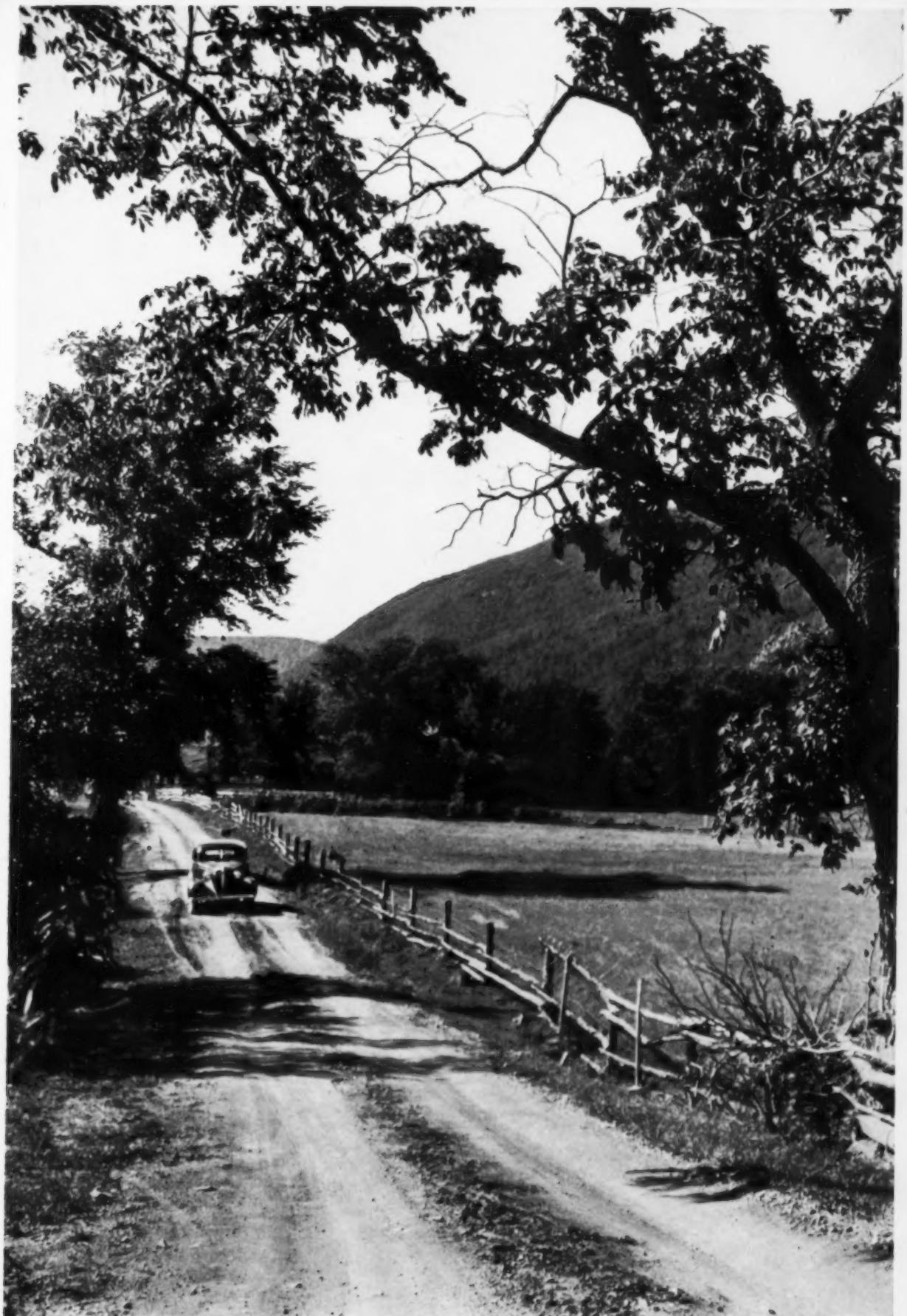
Scene on the Banff-Jasper Highway, Banff National Park, which is one of many to be seen from touring automobiles in the Canadian Rockies.
Photo by Can. Gov. Motion Picture Bureau



Vermilion Lake, looking towards Mount Rundle, Banff National Park, one of the beauty spots of Western Canada's highlands, becoming ever more popular with tourists.

Photo by Can. Gov. Motion Picture Bureau





Above—Along the Cabot Trail, near South Ingonish, Cape Breton Island, Nova Scotia. This beautiful area is in the vicinity of Cape Breton Highlands National Park.

Left—Percé Village and Percé Rock, at the eastern end of the Gaspé Peninsula, through which excellent highways have been built for the benefit of visitors from other provinces of the Dominion and the United States.

Photo by Canadian National Railways.



The Columbian ground squirrel, common trailside acquaintance, a noisy fellow but shy and not disposed to permit of close interviews.

FOUR-FOOTED TRAILSIDE FRIENDS OF THE ROCKIES

by HAMILTON M. LAING

IN addition to the impressions of charming, stupendous scenery the summer visitor to the Rockies usually carries home with him pleasant recollections of meetings with the wild creatures of these high places. That is, he usually does if he happens to have the understanding eye and heart for such things and is not one of those mere "sightseers" who stop off between trains, take the cut-and-dried bus ride somewhere, and imagine that they have seen the mountains. It takes a little more time of course than that to get even an acquaintance with the life of such a wonderful region; but there is no place where it can be learned so quickly as in the National Parks. The animals even more than the birds respond to kind treatment, and all, from chipmunk to moose or mountain goat, are very much more prone to give the visitor an interview than such animals would do in the wilds outside park sanctuary.

As a matter of fact, the visitor often has a hard time not to get acquainted with some of the four-footed folk. During the earlier part of the season—late spring or early summer—the motorist may have to slow his car to avoid collision with black bear or mountain ram right on the King's highway. At the Chateau Lake Louise he is liable to see a fat mantled ground squirrel that, growing tired of nipping the gardener's broad acreage of Iceland poppies before the door, runs inside to investigate the furniture of the palatial interior. At the Lodge in Jasper he may sit at evening on the veranda and, while enjoying his after-dinner smoke, and with the orchestra at his ear, watch the beaver, no less, disporting out on the lake before the door. At the larger mountain hotels there usually are a half-dozen black bears hanging around—mendicants, lazy beggars looking for a feed, preferring to eat the refuse than work in the woods for an honest living.

But fine as it is to see these large animals at close quarters, to many nature lovers such creatures when tame lose something. It is so unexpected, they are

not what we thought them to be. And this applies more particularly to the big game animals—the buck mule deer or bighorn ram in the middle of a paved road, the bear begging at mountain tea-room or the back door for a hand-out like any other 'weary'; but luckily there are many other animals in the mountains that, while tame enough to allow observation, still carry on at their jobs just as they did before parks were surveyed or roads and trails built into these lofty fastnesses. There are the chipmunks and ground squirrels, red squirrels and flying squirrels, weasels, mink, marten and other fur bearers, the porcupine, the pika and whistler and others that are all trailside acquaintances of an aloof sort, animals at home and in the original unspoiled by civilization.

It may be said, however, in justice to the big game, that the Rocky Mountain goat is an independent old codger not given at all to tolerating friendship with man. He will always be 'in the original.' The moose too, while grown well used to motor cars and pack trains and humans afoot, yet keeps his distance, as though he considers that the difference between man in parks and outside their boundaries is a gap too narrow to be easily seen.

Several species of the smaller mammals come to man in the wilderness for two reasons: they secure a measure of safety from natural enemies and they like man's foods. Thus the little chipmunk is ever a man follower; so is the mantled ground squirrel and Columbian ground squirrel. Wherever the pack train goes there you are liable to meet these little fellows. For one and all they love the meaty oat, and wherever grain is fed to horses, there will be found good pickings for these keen-nosed, nimble-fingered chaps who find in such provender a prize rich beyond a dream of what they could secure from the seed of any alpine plant of their mountains.

The little mountain chipmunk is a slender chap with a long tail—quite

different from the larger eastern relative. He is usually seen along the timbered trail, where there are openings and abundant sunshine. His very striped coat suggests sunlight and shadow. Usually we find him sitting up on a root or scampering along a fallen tree or posing on a rock—always close to some obstruction, for though he can dig holes he prefers a ready-made retreat. As a tree climber he is almost as nimble as a red squirrel, and he is the hardest working little fellow in the mountains. He comes out early in spring, stays out late in autumn, or till the returning snows drive him to his den, and his whole summer seems spent in busy search for seed provender to ensure him a living through the long winter.

A much larger, fatter and lazier fellow is the mantled ground squirrel, an animal that because of his stripes is usually called a 'big chipmunk.' He is a gourmand and loves to haunt the back yard of summer hotel or tea-room or temporary camp and stuff himself with almost every sort of eatable he can find. He grows tame to the point of familiarity, and will eat out of hand after a lesson or two. There is some point to his fatness, for, unlike the true chipmunk, he sleeps the winter through, dormant like the groundhog, and as he retires early he must go to bed fat. When in his home he is most secure around the rock-slides; in fact he is one of the real rock-slide mammals finding here a castle—safety from his many foes. For his is a hard world and there are hawks and owls and the golden eagle to be outwitted, and death stalks him also in the form of weasel, coyote and other predators that are ever in quest of such a toothsome meal.

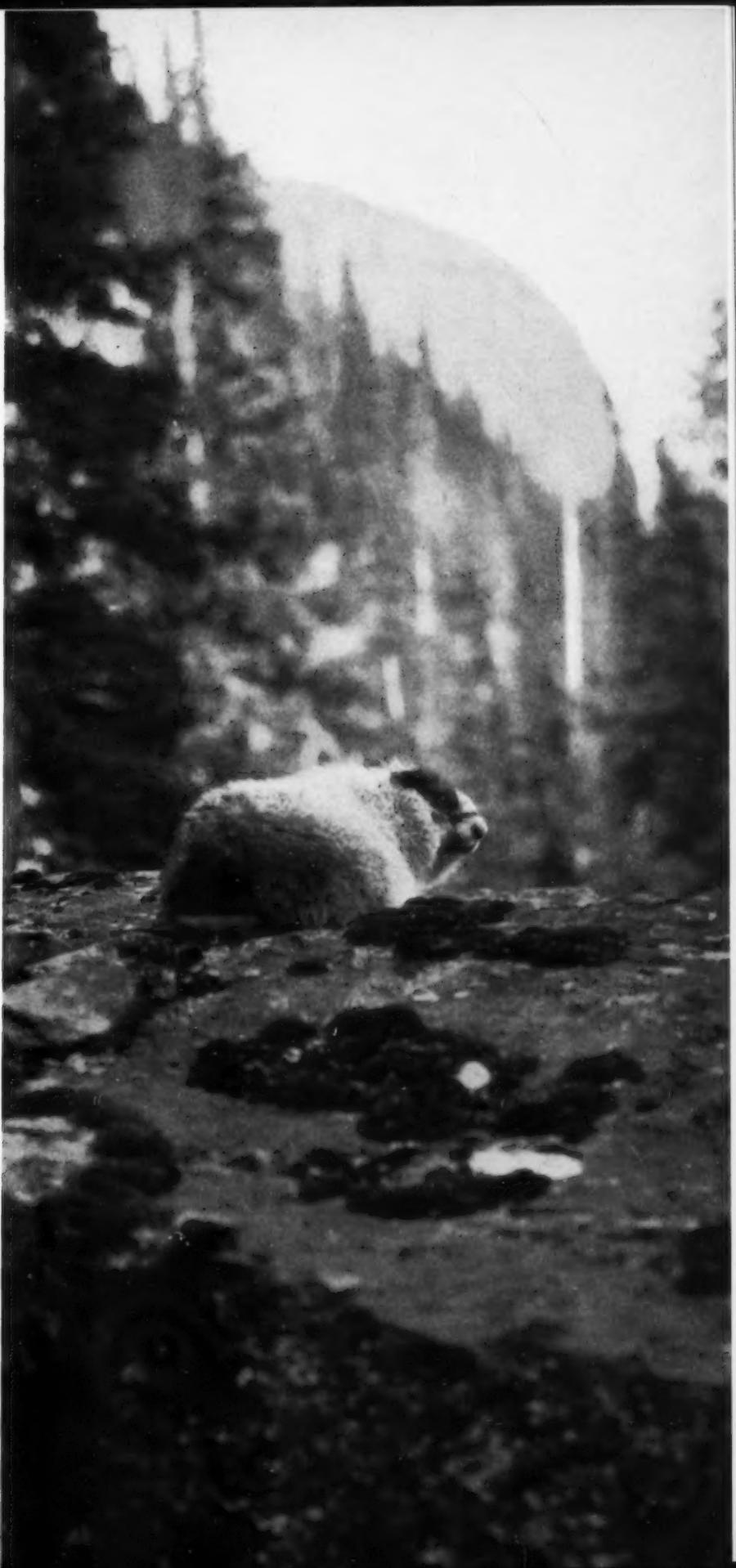
The Columbian ground squirrel, another common trailside acquaintance, is a big fellow and may always be told from the foregoing at a glance. The mantled ground squirrel wears broad black stripes down his yellowish coat, and a reddish mantle, that gives him his name, over head and neck, whereas the Columbian is generally speaking a grey-coated fellow. Another pronounced difference is that the mantled is almost a silent animal, whereas the Columbian is always whistling his shrill alarm. This partly may be due to his untrusting disposition. For usually at sight of man he rushes to his nearest den, there to pause and voice shrill disapproval, but refusing to hole up till he has to, and

it takes a deal of patience usually to teach one of these animals to eat out of hand—a feat easy with chipmunk or mantled squirrel.

Perhaps there is good reason for the Columbian squirrel's fearsomeness. He has long supplied a good part of the meat bill to many mountain predators. Even the huge grizzly used to take great delight and considerable profit in digging him from his den when the squirrel was luckless enough to have a home in an earth-hole remote from boulders. That is doubtless why he and the other mountain small mammals cling closely to the jumbled rock-slides. The golden eagle too is a persistent hunter of such small game, and many a ground squirrel finds himself jerked aloft in cruel talons and borne off to make a meal for the two eaglets high up in the eyrie in some frowning cliff.

A common trail-met acquaintance of the mountains is the porcupine. "Porky" elsewhere has suffered a good deal from settlement, hunters, dogs, forest fires, etc., none of which disturb him in the green forests of the mountain parks. A blundering, brainless fellow he is too. Packers and trail riders and hunters love him little because of his propensity for gnawing leather and other things that have grown salty from the touch of the human hand. "Porky" is really too stupid to be interesting. Either he waddles out of the way, or if annoyed climbs a tree. But beware of his tail! This spear-studded bludgeon is really a formidable weapon, defense complete enough to save him from his natural foes.

There are many mountain trails to-day in the parks, where the hiker or trail rider can meet that marvellously clever animal, the beaver. In fact, travellers often must make detours on account of him—or rather on account of his propensity for building dams and sending the pent-up streams wandering across established roadways. The Rocky Mountain parks have an abundance of these sagacious engineers. Though by choice the beaver loves best the low river valleys, yet when over-crowded he ascends tributary streams as high as he can find food in form of aspen, willow and alder, and occasionally he may be found living in a high lakelet—of his own making—surrounded by nothing other than small jackpine. In the wild, this creature is one of the hardest to meet; in the parks he has learned of his sanctuary



The hoary-mantled marmot, a huge grey-shouldered ground hog, lives in the rocky castles at high elevations.

and grows bold almost to the point of indifference to human presence. Thus, with a little patience often he may be observed at very close quarters at his interesting occupations.

Two four-footed mountaineers that greatly interest the visitor on high trails are the whistling marmot—usually called 'whistler'—and the pika or coney. It is the strong clear whistle of the big marmot usually that draws attention to him—a loud warning that, like a high-pitched note from a steam calliope, quite fills the valley. Very often the author is distant and unseen, but again he may allow close approach. Look for him always in the rock-slides and rocky jumbles of the mountain sides close to the timber line, and like as not you will locate him crouching on a boulder, or maybe erect like an immense ground squirrel—a huge grey-mantled groundhog, distant cousin of our old friend down East that 'looks for his shadow' on groundhog day. This hoary-mantled marmot is the king of the groundhog tribes, a very interesting creature but known intimately to but few. A stolid, stupid-appearing chap, but he is not. Indeed he is a watchful sentinel of the hills, and his warning whistle is heeded by all the four-footed folk of the timberline country.

The popularity of the strange little pika is attested by the many names by which he is known—rock rabbit, coney, little chief hare and hay-maker. Wherever a mountain trail crosses a rock-slide, there we may see this comical little grey bit of animation in fur popping about the rocks. But we are much more prone to hear him

first, his hoarse, nasal squeak being a warning signal of the high places, as full of meaning as is the steam-whistle note of the marmot. On account of his ears and general cut, pika resembles a tiny, tailless rabbit, but he is neither rabbit nor hare and merely a distant relative of such. We always see him a bit distantly, for the places in which he is tame are few. We cannot decoy him with food as we can the ground squirrels, as he eats only herbage, and so our acquaintance usually is limited to watching him skipping nimbly over the slide-rock or posing immovable on his watch-tower.

Of all his titles, that of hay-maker best applies to him. For he is a maker of hay in very truth, spending all the late summer and early autumn in collecting and curing the herbage at hand to serve as provender during the long winter. He does not lie dormant as the whistler or ground squirrel does during the six months of winter's siege at these high elevations, and so he must eat. So just as the chipmunk stores his seeds, so the pika stores his hay. What a labourer he is too! Every little tuft of that hay-pile is bought with labour. Day by day he adds to it, storing his hay under sheltering rocks, where it dries slowly and cures as perfectly as the fodder in any human mow. Rock-slide and mow of course will be buried for months, often under many feet of snow, but pika will be safe and happy in a full larder. A strange and interesting little fellow; indeed of all trailside friends of the Rockies, he perhaps is least known and most worthy of acquaintance and study.



The beaver, here shown carrying aspen, has grown tame and bold in the national parks almost to the point of indifference to human presence.



Wherever a high trail leads to the rock-slides, there is sure to be a chipmunk, ground squirrel, pika or hoary marmot—the latter shown here—to enliven the way.

The strangeness of the little pika is attested by his many names—coney, rock rabbit, little chief hare and hay-maker.





Wherever the pack horses have been fed their oats, there will be found the little mountain chipmunk.

Look for the "whistler" always about the rock-slides and rocky jumbles of the mountain sides close to timberline.





The mantled ground squirrel is a gourmand, a persistent camp follower and "hang around" at the mountain hotels and tea-rooms.

The Columbian ground squirrel is not confiding. Usually he sits at the door of his den or in it, whistling shrill disapproval at his visitor.





Geyser at Wairakei, North Island, New Zealand.

THERMAL NEW ZEALAND

by C. T. HARRIS

MATHEMATICAL operation of the geysers is the most astonishing feature of the Wairakei thermal valley, an outstanding resort in the Rotorua-Taupo volcanic area of New Zealand's North Island. Here may be found a great modern spa, and fine trout-fishing.

Intimately associated, too, with the Wairakei Geyser Valley are the Huka Falls, over which the Wai-kato (swirling waters), New Zealand's largest river, plunges forty feet into a swirling, fathomless pool; and the magnificent Ara-tia-tia (ladderway) Rapids, rushing and roaring in mad flight for over half a mile as the river drops 300 feet. Here, in season, may be seen great fighting fish leaping up through the swift rapids, against what seem overwhelming odds. On the way to Wairakei, too, is a roadman's cottage, with a natural cold water supply at the front door, and hot at the back!

Amid dense clouds of steam, hissing from vents in the ground, from the cliffs above, and from the fern-clad gully below, one walks fearful and wondering to the Wai-ora Valley, noted for the park-like beauty of its surroundings and the variety of its coloured lakelets and pools. A collection of marvels, indeed, is to be found in this mossy vale! The Golden, Salmon, Emerald and Golden Nugget waterfalls; the Wishing, Electroplating, and Laundry pools; the Red, Blue and Chain lakes — the last of several colours, yellow, blue, dark green, ultramarine, light green and cream; not to mention the Rainbow Cliffs, the Heavenly Twins, the White Terrace, the Alum Baths, the Wairakei Sulphur Crater, surrounded by burning rocks, Satan's Spectacles and Satan's Eyes. Then, we must not forget the Frog Mud Pond, the Sulphur Springs and Psyche's Mirror.

In the great Wairakei Valley itself the attractions are even more varied, and certainly more remarkable. The various shades of bubbling mud, ranging from bleached white, through the most delicate rose pink, to jet black, though not so spectacular as the geysers, are every whit as beautiful. These are the very muds

used in the manufacture of skin beauty preparations.

And now for the only geysers in the world, the actions of which can be accurately predicted according to a set time-table, such as the Pack-horse, the Donkey Engine, the Wairakei, the Prince of Wales' Feathers, the Twins and the Paddle-wheel. We are told, as we gaze at a huge stone — probably weighing three tons — that, in just thirty seconds, this Dancing Rock, which is now apparently resting on the bottom of an ordinary warm pool, so common in the thermal country of New Zealand, will be lifted by a subterranean force of steam and, after bouncing up and down three times, will let the Pack-horse play — and play it does to the second. After every third display, the "thump-thump" of the Paddle-wheel is heard. No sooner is this over than the Prince of Wales, the inlet to which has been blocked some time before, plays in two beautiful curving plumes of glistening water. Then the Ocean Geyser beats upon the ear with the sound of waves upon the shore. The Wairakei, which played at one time to a height of twenty feet every ten minutes, now, as the result of a crack in its basin, shoots irregularly, but to a height of seventy feet.

In turn we wonder at the Champagne Waterfall, the Wai-tangi (waters of mourning), Mirror, Cathedral, Sparkling Oil, Lightning and Artist's pools, the Black, Orange and Yellow geysers, the Burning Rock, the Opal Lake, so called from the presence of copper sulphate, Satan's Punch Bowl, the Devil's Toll Gate, the Menagerie — rocks that resemble many animals; the Boiler, Funnel and Te Reke-reke geysers, the Devil's Ink Pot, the Heron's Nest, the clear waters of which, boiling in only one corner, are considered equal to those of Huni Judi in Hungary; the Petrifying Springs, the Dragon's Mouth, from which a geyser spouts at regular intervals of seven and a half minutes; and the Green, Golden Fleece and Primrose terraces.

The Champagne Cauldron, boiling in two places, centres its main activity on the right, where it bubbles to a height of five feet. This pool, at least eighty feet



Huka Falls, on the Upper Waikato River, North Island.

Dragon's Mouth Geyser at Wairakei, North Island.





Twin Geyser, at Wairakei, North Island.

Boiling mud at Whakarewarewa, North Island.





Waimangu Geyser at Rotorua, North Island, which was at one time the largest in the world, and now the biggest boiling lake.

deep, never sleeps. Now green, now ultramarine, now inky black, it changes the colour of its waters which, effervescently, resemble the wine after which they are named. The Tu-hua-tahia Terrace, formed by the overflow, provides a magnificent range of hues. Near at hand are pools of red, yellow and black mud. The Eagle's Nest, which plays every twenty minutes, was formed naturally at one time by petrified branches. Others, added half a century ago, have since gradually become fossilised.

Exciting endless wonder, comments and speculation, the Karapiti Blowhole, called by Sir James Hector, famous geologist, "the safety valve of the North Island," and by George Bernard Shaw,

great English dramatist, "a monstrous waste of energy," is certainly considered by many as the most awe-inspiring single manifestation of Nature's power in the whole of New Zealand's thermal-volcanic area. Roaring ceaselessly from a bottomless funnel about a foot in diameter, a column of steam rushes forth from a manuka-covered hillside on the left bank of the Wai-pu-wera-were Stream. The unstable ground in the neighbourhood is pierced by countless hot springs and steam vents, and it is no cause for wonder that the Maoris of old paused, as they passed, to pay tribute to the gods of the underworld. Finally, as a delicious contrast, the coloured Okura-wai Springs spread a banquet of varied tints before the eyes.



Maori child in hot pool, Rotorua, North Island.

EDITOR'S NOTE BOOK

J. L. STEWART, who contributes the article entitled "Canada's Motor Car Industry," has had a long association with that industry in this country. He was for fifteen years manager of the automotive division of the MacLean Publishing Company, and for the past six years has been General Manager of the Canadian Automobile Chamber of Commerce. Mr. Stewart is a Councillor of the Society of Automotive Engineers, and is also manager of the National Motor Show of Canada, which has become such a brilliant annual event in Toronto.

Richard Finnie, whose article in this issue on "Filming Rural French Canada" is a distinct contrast with former contributions on the more northern section of this Dominion, was born in Dawson, Yukon Territory. During the past decade he has produced some 25,000 feet of motion picture film for the Canadian Government, comprising ethnographic studies and official records of polar expeditions. Having appreciated the colourful character of Quebec Province, and the interest displayed in its scenic attractions and charm of the French-Canadian "habitant," he set out to create a pictorial record of conditions on the Island of Orléans, in Charlevoix County (between Quebec City and the Saguenay River), and along the Gaspé Peninsula. Some of his many observations are illustrated in the article, supplemented by several photographs by Ivan Dmitri, reproduced through the courtesy of the Abbé Albert Tessier, of Three Rivers.

Cecil Thomas Harris, M.A., who contributes an article dealing with New Zealand in this issue, was born in Masterton, North Island of New Zealand, in 1906. He graduated from the University of New Zealand in Arts, Journalism, and Social Science, and has since been on the staff of several leading secondary schools in the country of his birth. All things pertaining to New Zealand have been his specialty for many years. He has read and travelled extensively, and his articles have appeared in some of the world's outstanding journals. He has just completed an historical work, "The Diamond Jubilee of the Piako Country."

Hamilton Mack Laing, who has contributed the article on "Four-Footed Trail-side Friends of the Rockies" in this issue, was born in Ontario, but went out West at an early age. He taught school at Oak Lake, Manitoba, but his summers were spent on various expeditions, during which he made a close observation of wild life and collected many specimens for the United States Biological Survey to Lake Athabasca and for the National Museum of Canada.

The 38th Annual Convention of the Canadian Institute of Mining and Metallurgy, held at Montreal, March 15 to 17, was attended by some 800 members and delegates from all parts of Canada and the United States, and from the leading mining plants of the Dominion. With not unwarranted pride, they heard statisticians from Ottawa and the various provinces relate the record of the industry for 1936 — the greatest in Canada's history.

Throughout the meeting, papers were presented which, although technical, as beffited a gathering of experts, did much to advance the knowledge of the commercial geography of Canada; and the results of their deliberations can be followed, with profit, by all Canadians desirous of learning more regarding the natural resources of their country. For example, Dr. J. A. Allan, Professor of Geology at the University of Alberta, described the rock salt deposits near McMurray, Alberta. It is estimated that this deposit comprises 500,000 tons of salt per acre, and from information available, as to the extent of the deposit, approximately 30,000,000 tons of salt can be mined.

In addition to her pre-eminence as a producer of gold, radium and the base metals: copper, nickel, lead and zinc, Canada produces more than twenty minerals of the non-metallic group, all of which are essential to a manufacturing nation.

Perhaps one of the reasons why Canada's mineral industry has progressed so rapidly is to be found in just such conventions as that of the Canadian Institute of Mining and Metallurgy, where there is free exchange of ideas among the men engaged in the industry. The *esprit de corps* of mining men is well known, and it is entirely due to their investigations and resourcefulness that many of the problems peculiar to the industry have been solved.

AMONGST THE NEW BOOKS

Rail Road and River, by W. W. SWANSON, Ph.D., Professor of Economics, University of Saskatchewan, (The MacMillan Co., of Canada, Toronto, price \$1.50).

This compact book by an eminent authority on economic problems comes at an auspicious time, when suggestions are being made in parliamentary circles to again "tackle" the Canadian National Railways problem.

In his book, Professor Swanson first places the railway problem in its true historical setting with an analysis of the railway situation at present, and then approaches the highway and water transportation from a new angle. He points out that the government railway adventure is at present increasing our national debt by the alarming sum of nearly \$100,000,000 annually. Since the origin of the trouble consists in the fact that we have built too many railways, have built highways which compete with railway transportation, and have also built canals which permit of water competition with the railways, the question is a serious one, and demands immediate and serious consideration.

His discussion of the highway and waterway problems leads him to the conclusion that a principle of making the users pay for public services would solve the problem. As regards the more difficult railway situation, he is much in favour of adopting Sir Edward Beatty's plan, which he thinks is the best solution yet offered, and while it has been subjected to destructive criticism, none of the critics have attempted to offer any alternative plan. Beatty suggested a unified management of the two main systems. The savings by this unification, "after each property had paid its owners' net earnings, equal to those which would have resulted if the properties continued to be operated independently, would be divided on an agreed basis, with at least one-half going to the owners of the National Railways."

Some of the other alternatives which are being tentatively considered, such as taking a lot of the capitalization from the National Railways and placing it elsewhere, would take nothing off the taxpayer's problem. The coupons of the bondholders would be met, the deficit would not be reduced. The people pay! Under the Beatty plan, economies could be made by lessening the duplication of services in many places.

Professor Swanson ends by stating that economic errors have been made, but that they are not fatal. "What is needed today is a liquidation of these errors as far as that can be accomplished. In that liquidation, the rules to follow are common sense. . . . Impartial and courageous handling of a problem, which is difficult but not insoluble, offers a brilliant opportunity to wise and courageous administrators."

His discussions and analyses should be read by all Canadians who are really concerned with our Rail, Road and River problems.

The University Atlas, by GEORGE PHILIP AND H. C. DARBY, (George Philip and Son, Ltd., 32 Fleet St., London, E.C. 4. 1937, price 10/6).

The contents of the University Atlas are arranged in such a manner as to supply a condensed description of various projections used in making maps, notes on climate graphs and astronomical diagrams. The physical facts of geology, continental structure, soil grouping, oceanography, the major climatic zones, the distribution of population and of racial elements, and the other essentials of a well-balanced atlas are shown by means of an

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Frankfurt on the Main: Roemerberg Festival Plays—Goethe, Schiller, Shakespeare in front of historic Town Hall.

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While this Atlas is designed for University study, it is of convenient size for home use. Such an atlas is almost essential in the home, where nearly every time a newspaper is read, an appeal to such a reference is necessary for properly grasping the significance of local or international affairs. A map is continually of immediate practical importance, whether it be for locating the position of the flooded regions in the Central United States, or of the fleets patrolling some of the European coasts.

D. A. NICHOLS

From India comes the latest evidence that the study of geography is taking its rightful place among progressive peoples the world over. The Canadian Geographical Society warmly welcomes the appearance of the *Calcutta Geographical Review*, whose first number was issued in September, 1936. A small band of workers founded the Calcutta Geographical Society in 1933 to supply the need of a central organization for the increase and spread of geographical culture in Bengal. With a strong Council of distinguished Indian educationists, supported by English and native officers of the Geological Survey of India, the Society has been active in organizing geographical lectures and exhibitions, has encour-

aged geographical research and travel, and has convened a geographical conference. The logical development and extension of these enterprises now follows in the publication of its Review. This first number is extremely interesting, and attractive in appearance, and is illustrated by a number of excellent plates and maps.

Its articles include: The Everest Neighbourhood, Tibet, by Dr. A. M. Heron; Glimpses of Burma and the Shan Hinterland, by Dr. and Mrs. Sahni; The Story of a Stone, by D. N. Wadia; Geography Teaching in India, by A. B. Basu; and Some Impressions of Japan, by A. C. Bagchi.

Lectures delivered before the Society are ably summarized, and there are a number of abstracts from current geographical journals, as well as annual reports of the work of the Society since its inauguration. The annual subscription is Rs. 3. Application may be made to the Honorary Secretary, Geology Department, Presidency College, Calcutta.

Wild Life Ways (London: University of London Press, 1936, 3/6), is a collection of four true stories by the well-known Canadian naturalist, HARPER CORY. Reflecting the conditions and surroundings of animal life, each describes the life and habits of one particular individual or species, and every incident quoted is founded on fact. Those who have read Mr. Cory's "Grey Owl and the Beaver," or "Lovable Beasts" will find this book full of the same keen observation and humorous delight in the animals he has so faithfully observed. Youthful readers especially will be enchanted with the numerous spirited drawings by W. N. Parker.

A prayer that Portugal may be spared the fate of Spain will rise fervently from readers of Rodney Gallop's *Portugal: A book of folkways* (Toronto: MacMillans in Canada, 1936, \$4.50). An enchanting and learned book, written by an author long familiar with the "garden of Europe planted by the sea." This characterization by Ribeiro is fully borne out in Mr Gallop's vivid description of the country in the opening chapters. In the second part, the traditional beliefs and customs, the rites and festivals of the Portuguese are described in detail and collated with those of other nations. The third and last section contains numerous transcriptions of folk-songs and dance-tunes and gives (with free translations) some specimen ballads and a collection of quatrains "as varied as

SANDEMAN



*Port and
Sherry*

SANDEMAN

the Greek Anthology." Among examples revealing the peasant sense of beauty may be quoted:

"There sinks the sun to rest,
The sun sinks, the shadow stays,
The sun departs in wonder
At the richness of the shade."

or his sly satirical humour

"From Lisbon they sent me
Four monks in a basket
Friar Oil, Friar Vinegar
Friar Garlic and Friar Pepper."

The end-paper map, the illustrations from the author's beautiful photographs and the sixty delightful little black and white sketches by Marjorie Gallop greatly enhance one's pleasure in this charming book.

Mauretania, Landfalls and Departures of Twenty-five Years. (London: Hodder and Houghton (Musson Book Co., Ltd., Toronto, 1936, \$3.50.) Bound in the scarlet and black reminiscent of her four great funnels, the Mauretania has found in Humfrey Jordan her ideal biographer. The book brings to the land-lubbers a revelation of the thousand and one elements that go to the making of a great liner. Playing a very gallant part in England's history, since in 1907 she challenged Germany's decade of supremacy on the Atlantic, the Mauretania's career merits the admirable treatment found in this unique history. The building of her reputation as the world's largest ship and fastest liner for 22 years is set forth with a wealth of incident and detail scarcely less interesting than the record of her splendid war service. Based on Cunard records, and with the best sources of sea lore at his disposal Mr. Jordan has written the definite life of the once-proud queen of the English merchant marine, and made of it an unforgettable and enthralling book.

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